

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 69
No. 10

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

The Most Unprepared Country on
Earth.

Probable Condition of the Iron and
Steel Industry of the World After
the War.

Cost of Government-Built Battle-
ships.

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BALTIMORE, MARCH 9, 1916



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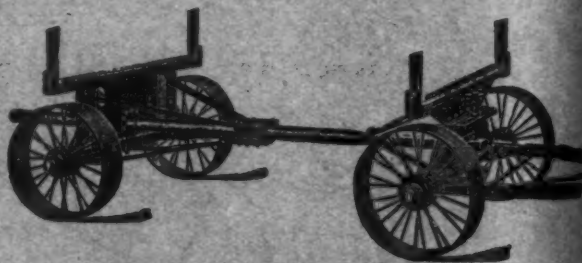
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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

Vol. LXIX. No. 10.
WEEKLY.

BALTIMORE, MARCH 9, 1916.

\$4.00 A YEAR.
SINGLE COPIES, 15 CENTS.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS RECORD PUBLISHING CO.

RICHARD H. EDMONDS, Pres. VICTOR H. POWER, Treas.
FRANK GOULD, Vice-Pres. I. S. FIELD, Sec'y.

RICHARD H. EDMONDS, Editor and General Manager

BRANCH OFFICES:

NEW YORK, 52 Broadway CHICAGO, 1409 Fisher Bldg.
BOSTON, 733 Old South Bldg. ST. LOUIS, 608 Century Building

Subscription \$4 a year (payable in advance) to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. To Foreign Countries (including Canada) in the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as second-class matter.]

In order to avoid delays, all correspondence pertaining to news or advertising matters should be addressed directly to the Manufacturers Record, Baltimore, Md., and not to individual editors, officers, employees or any branch office.

SAFETY, COURTESY, SERVICE—A RAILROAD INNOVATION.

THE enlightened action of Charles A. Wickersham, general manager of the Georgia Railroad and president and general manager of the Atlanta & West Point Railroad and Western Railway of Alabama, as disclosed in his recent circular order to employees, shows a keen insight into human nature which always unhesitatingly co-operates with a public-service corporation that is frank and fair with the public.

In issuing the order printed below Mr. Wickersham is advancing the interests of those roads, and is recognizing the rights of the public. If this spirit had always prevailed, the politicians would never have been able to wreck our railroads.

This order means a degree of broadmindedness and proper appreciation of the rights of the public which should be followed by every railroad in the land, not only in this way, but in a thousand other ways to the benefit of everybody.

Here is what Mr. Wickersham has put forth in circular form:

To All Employees:

Any blockade to passenger traffic by floods, washouts or accidents is always a source of keen interest on the part of the public at large, and especially those engaged at the time, or are about to engage in a railroad journey, or who are in close contact with the railroads at the time of such an occurrence, either as friends come to meet a train or to speed a parting guest; but, as a general rule, their natural curiosity is usually balked, if not actually offended, by the reticence of railroad employees who customarily give but meager replies to inquiries, which is due, of course, to a very natural, and in the main proper, spirit of reserve on their part in discussing a misfortune of the railroad, and are unwilling to appear loquacious in the face of an emergency.

It is our earnest desire to not only keep step with progress, but to lead the way in matters looking towards the promotion of closer common interests with our patrons and the public, and in line therewith this notice is issued to impress you anew with the fact that it is our policy to regard the public as a partner in our good or bad fortunes, and not only are we willing, but indeed do earnestly desire that you recognize the interest and moral right of the public, as a member of the family, to be as fully informed as possible concerning any occurrence of this sort.

In future, upon the occasion of any of these blockades, the superintendent will inform the agents and conductors as to just what has happened, and this information should be promptly disseminated to the waiting public at stations and the passengers on trains. In the case of a woman with small children and a lot of miscellaneous hand baggage it is quite conceivable, if informed by the agent, before boarding a train, that there would probably be a delay passing a blockade, or that it might be necessary to get off and walk around or across the obstruction, she might prefer to postpone her trip until next day or to a later time, and, even if this should mean the loss of a few fares occasionally, we would view that result with the greatest cheerfulness in the knowledge that discomfort or inconvenience to our good friends and patrons may have been averted, to the advancement of friendly feeling in the hearts of the people.

CHAS. A. WICKERSHAM,
General Manager.

The South Falling Behind in Iron Production and the Reasons Therefor.

IN 1890 the South made, in round figures, about 20 per cent. of the pig iron output of the country; last year it made only about 10 per cent.

While the South did not double its iron production between 1890 and 1915, the country largely more than trebled its output. The South has for years been falling steadily behind in its iron production, as compared with the rest of the country.

Out of a total output in 1890 of 9,200,000 tons, the South had nearly 1,800,000 tons; in 1915 out of a total of 29,900,000 tons for the country, the South had a little over 3,000,000 tons. Moreover, a number of Southern States showed a heavy decrease in output as compared with what they were doing five or six years ago.

This most unfortunate condition is not due to any lack of ores or coal, but to many causes which have militated against the South's development.

Every fight made against corporations, every blow aimed at railroads, every fight for free-trade by the South, every act of the political demagogues of this section, since free silver days, which burdened the South with a load almost impossible to carry, down to the present disgraceful fight in Congress against the President and the Nation's honor, has retarded the South's development by lessening the confidence of capital in this section. Men of money have been afraid to invest in great enterprises where such conditions have prevailed, and we may as well face the facts and see how to overcome this adverse position.

Iron is not alone in failing to keep step with the country's progress; there are other industries in which the same conditions prevail.

We are paying the price of permitting the demagogue in politics to lead us into the ditch, and we are having a hard scramble to get out. While we have been down in the ditch because of our weaknesses and short-sightedness, other sections have been rushing ahead, far outdistancing us, as they have done in iron and steel.

The conditions prevailing in the production of pig iron in the country are shown by the following statistics of output by States by years:

PRODUCTION OF PIG-IRON, IN TONS, BY STATES.

States.	1910.	1913.	1914.	1915.
Massachusetts and Connecticut.....	16,582	12,810	6,594	7,902
New York and New Jersey.....	2,203,188	2,187,620	1,559,564	2,104,780
Pennsylvania.....	11,272,323	12,954,936	9,733,369	12,790,668
Maryland.....	326,214	289,959	195,594	251,548
Virginia.....	444,976	341,815	271,228	251,346
Georgia.....	14,725
Alabama.....	1,939,147	2,057,911	1,826,929	2,049,453
West Virginia and Kentucky.....	275,170	315,731	236,393	291,040
Tennessee.....	397,569	280,541	216,738	177,729
Ohio.....	5,752,112	7,129,525	5,283,426	6,912,962
Illinois.....	2,675,646	2,927,832	1,847,451	2,447,230
Indiana and Michigan.....	1,250,103	1,775,883	1,557,355	1,986,778
Wisconsin and Minnesota.....	307,300	367,326	329,526	372,966
Missouri, Colorado, Washington and California.....	428,612	824,263	567,777	271,921
Total.....	27,308,567	30,966,152	23,332,244	29,916,213

Taking from the annual reports of the American

Iron and Steel Association and the American Iron and Steel Institute, we have the following figures as to the production in the South:

States.	1910.	1915.
Maryland.....	326,214	251,548
Virginia.....	444,976	251,346
Georgia.....	14,725
Alabama.....	1,939,147	2,049,453
West Virginia and Kentucky.....	275,170	291,040
Tennessee.....	397,569	177,729
Total for South.....	3,397,801	3,021,116

Comparing 1915 with 1910, Maryland shows a decrease of 74,666 tons; Virginia, a decrease of 193,630 tons, and Tennessee, a decline of 219,840 tons, while Georgia, in 1910, produced 14,725 tons, it has now ceased to be an iron-producing State. Alabama made a gain of 110,306 tons, although its production last year was 8458 tons less than in 1913.

In 1910 Kentucky and West Virginia combined made 275,170, while in 1915 these States produced 291,040 tons, a gain of 15,870 tons.

Pennsylvania last year produced 12,790,668 tons of iron, or four times the total output of the entire South. Ohio made considerably more than twice as much iron as the South, and Illinois made 80 per cent. as much as the South.

The production of pig iron for the country last year was 1,049,939 tons less than the output of 1913. This was due to the depression existing during the first part of the year, when the total output of the furnaces of the country was 12,233,791 tons. The last six months of the year gave 17,682,422 tons, showing that for that period we were making iron at a rate of over 35,000,000 tons per year, and the indications are that the production for this year will very considerably exceed that amount. Indeed, unless hindered by strikes or other unforeseen causes, the output of this year should largely exceed 40,000,000 tons.

It is interesting to note that during the last half of 1915 the South, in keeping with the rest of the country, very considerably increased its output compared with the first six months of the year. It did not, however, during that period make an increase at all comparable to that of the country at large. The total production of the country during the last six months of the year was 5,450,000 tons larger than the production for the first six months, but the gain in the South was only 566,000 tons, or, in round figures, about one-tenth of the gain in the whole country.

Not until the South turns much more largely to the production of steel can we hope for it to again catch step with the growth of the iron and steel output of the nation. Considerable progress is being made in this direction, but not half as much is being done as should be done.

The plants of the United States Steel Corporation at Birmingham and of the Gulf States Steel Company at Gadsden are being pushed to their capacity. The output of the Maryland Steel Works at Spar-

rows Point is also being aggressively increased, and with the expenditure of from \$10,000,000 to \$20,000,000 on this plant, as projected by the Bethlehem Steel Company, which has recently purchased it, Maryland will take a much more prominent position in the iron and steel industry than ever before.

Another factor of importance is the building at Chattanooga of a steel plant to cost \$2,000,000, which will furnish a local market for a large amount of the iron output of that immediate vicinity.

But existing plants at Birmingham and Gadsden should be very greatly enlarged. New iron and steel enterprises should be established at other points, and the men who have led in the iron and steel development of the East and the West must become leaders in developing the iron and steel interests of the South and Southwest, or else the time might come, in the event of war, when their existing plants would be in the hands of an enemy and valueless to them and to the country. Indeed, should existing plants in the East and West ever be captured, in part or in whole, they would prove one of the greatest factors in enabling our enemies to defeat any forces that might be brought against them, for they would supply the enemy with munitions, just as 70 per cent. of the iron and steel output of France and a large proportion of that of Belgium have, since shortly after the beginning of the war, been turned into munitions of war to an enormous extent for the supply of the German army and against their own countries.

It is true that the discovery of the Mesaba ore region completely changed the relative iron conditions of the country as then existed in 1890, to the tremendous disadvantage of the South and the advantage of the iron and steel interests of the East and West. It is the fashion now to develop these Eastern and Western interests to the neglect of the South, but it is time for this condition to go out of fashion, and for the development of a radically new situation.

The South cannot do this work alone. It should do all that is in its power, and this is far more than it is doing. It should not wait on the capital of other sections. Nevertheless, it is a duty to the nation as well as to their individual interests that capitalists of the East and the iron and steel men of the country should concentrate upon the largest feasible development of the great iron and steel potentialities of the South and Southwest.

Out of the total production of last year of 29,916,213 tons of pig iron, the production by States dependent on Lake Superior and foreign ores, and to a very limited extent on local ores, was as follows:

States.	Tons.
New York and New Jersey.....	2,104,780
Pennsylvania	12,790,668
Ohio	6,912,962
Illinois	2,447,220
Indiana and Michigan.....	1,986,778
Wisconsin and Minnesota.....	372,966
Total.....	26,615,374

As Pennsylvania produces only about half a million tons of iron ore a year, getting practically all of its supply, like the Lake States, from the Lake Superior region, with the exception of a small amount of foreign ore, one can readily see the overwhelming disaster which would come upon this country if the Lake Superior ore supply should be cut off. It would be too late then, in time of war, to develop ore mines and build furnaces and steel plants in other sections with a view to taking care of the country's necessities for iron and steel as the foundation stones on which alone "National Preparedness" can rest.

CONGRESS SHOULD MORE NEARLY REPRESENT THE NATION'S SENTIMENT.

TECHNOLOGY SALES CO., INC.

New York, N. Y., February 25.

Editor Manufacturers Record:

The letter of Lord Northcliffe, published in your issue of the 24th inst., taken together with the modest statements made by Mr. McGrath about himself, calls attention to a condition of affairs in our democracy which may or may not have been foreseen by those who prepared the Constitution, but for which in any case practical provision has not been made.

Mr. McGrath is, as he calls himself, just an "average citizen," who does not like to rush into print, but prefers to discuss his convictions with other citizens in a private and friendly way. In this way he educates their opinions, educates himself and helps to create a definite public opinion. There are many more "average citizens" of the same kind who are doing their duty to their country in this same unostentatious but effective way. Some have rushed into print, others have not, but enough have expressed themselves in one way or another to make it clear that they all have reached clear convictions of what our country should do.

Now comes the hiatus. The political representatives of all these "average citizens" seem to be more or less wholly cut off from their constituents, whose opinions and convictions they should express. To put it bluntly, our present Congress does not represent the best American citizenship; on the contrary, its conduct is such that it threatens to betray the country.

Is it conceivable that the interests and the welfare of a nation should be delivered over to such Representatives who, once in session, can play small politics while showing unbelievable ignorance of vital issues and unbelievable indifference to them, while the people who have sent them stand helpless to defend themselves against them? Do we not have any recourse against such a Government? In other parliamentary countries there are methods of turning a ministry out of power as soon as it does not any longer represent the majority of the people. Here, unfortunately, there is not any such provision, and once an Administration has been elected we are compelled, for good or evil, to tolerate it during a fixed period.

Monarchies have been overthrown and democracies established because the former have been regarded as either not representing or as misrepresenting a nation, while the latter have been looked upon as truly representative of the people. But now we see a Government which seems to be morally and intellectually far below its "average citizens," yet we stand helpless, waiting and praying for the November elections to hurry on so that we can drive out the misrepresentatives.

In the campaign for military and industrial preparedness we must not overlook the need of political preparedness, which will make our Government more responsive to the will of the people than it has shown itself to be.

TECHNOLOGY SALES CO., INC.,

LOUIS A. FREEDMAN, Manager.

Mr. Freedman clearly states the case. The people of this country know that the Democrats in Congress who are fighting President Wilson from personal hatred, or who are opposing preparedness for the same reason, selling their souls for a mess of pottage in the shape of hyphenated votes, do not represent the sentiment of the country. They are misrepresentatives, but they would not be missed from the councils of the nation if they were at the bottom of the deep blue sea. Indeed, the nation would be supremely blessed if they were all put on board of one ship and that fed to the devil fish of a German submarine.

They are ready to sell their nation as well as their honor at a time when every honest-hearted, true American recognizes that Woodrow Wilson is President, not of a party nor of a section, but of the United States, and knows that he should have the backing of the nation as he seeks to maintain the nation's honor.

We must, as Mr. Freedman suggests, have a political preparedness by sending to the graveyard of political hopes those who are now proving recreant to their trust or who uphold the nation's honor only because driven to do so by cowardice and fear of enraged constituents.

THE VALUE OF A SMILE.

THE Pennsylvania Railroad system, in its weekly bulletin of information for employees and the public, sends out the following which is well worth everybody's attention:

Some time ago the New York Sun published the following dispatch from London:

"Alice John Hodges of Chelmsford, who died some time ago and whose will was probated today, bequeathed \$500 to Mrs. Walker, the wife of a bank cashier, for simply smiling pleasantly at the testatrix as they left church together. Mrs. Walker explained today that she sat near

Miss Hodges in church, and as she came out she smiled at her and exchanged a few pleasant words."

Commenting on this incident, the Watchman-Examiner of New York said:

"Now, there is no market for manufactured smiles. Mrs. Walker smiled because it was in her heart to smile. She did not smile with a legacy in view.

"Smiles have brought to many richer legacies than Mrs. Walker received. They have brought the love and gratitude of burdened and lonely hearts.

"Smiles do not cost much, but they accomplish wonders. The other day we sat in a street car gazing into twenty faces burdened or sad or sullen. A mother came in with a little boy of three or four. He was a perfect picture of physical beauty. His little face was radiant. Suddenly he began to laugh. His mother tried to subdue him, but he kept on laughing.

"Gradually the men and women in the car began to thaw out, and after a while the whole company was smiling. The atmosphere of the car had changed.

"That little boy had wrought a transformation, and a score of weary men and women went home with lighter hearts.

"It hurt some of them to wrinkle up their faces into a smile, but after they had practiced a little they liked it."

FREE-TRADE BABIES WORRYING THEIR POLITICAL FATHERS.

UNDER the heading, "Willing to Help the Sugar Growers," the Charlotte (N. C.) Observer publishes a special dispatch from Washington, which says:

The bill of Chairman Claude Kitchin to repeal the free-sugar provisions, which was reported out today from the Committee on Ways and Means, drew complimentary references from Paul J. Christian, the Washington representative of the cane-sugar interests:

"The North Carolina Congressman throughout has shown a disposition to help Louisiana and to correct the injustice that was done that State by the Underwood tariff. . . . The Democratic leader gave his assurance last fall before Congress convened that the free-sugar clause never would become a law. When it later was pointed out to Mr. Kitchin that credit in the sugar district of Louisiana was being impaired because of the fact that bankers would not make as liberal allowances as they otherwise would do until the free-sugar clause actually was wiped from the statute books, the Democratic leader agreed to hasten the repealing legislation. He gave his assurance that the sugar crop had been singled out for a consumption tax, knowing the strong effort made by the refining interests and certain prominent Democrats to have the sugar industry made a victim.

"The North Carolina Congressman throughout has shown a disposition to help Louisiana and to correct the injustice that was done that State by the Underwood tariff. The sugar people should feel deeply grateful to him for the personal steps he has taken to save them from ruin and to permit their industry to continue to flourish in the States bordering on the Gulf of Mexico."

Perish the thought that Congressman Kitchin was willing to "help Louisiana" and "to correct the injustice that was done that State by the Underwood tariff," and that he gave his assurance "last fall before Congress convened that the free-sugar clause never would become a law"!

A Democrat like Kitchin betraying such a sacred bill as the Underwood-Simmons measure, admitting that free sugar was rank injustice to Louisiana producers and promising that it should never be put into effect!

What base calumnies are these?

What is the free-trade element in the Democratic party going to do when one of its pet measures, its beloved darling free-sugar baby, is thus ruthlessly murdered by one of its own fathers? And, then, who is going to be the next to kill off a few more free-trade babies for the good of the country?

There is the free-trade baby of iron ore and pig-iron, which, but for the war, would have bankrupted many iron industries in the South and as effectually knocked them on the head as free sugar would have done to Louisiana sugar interests.

Who will rise up and kill that free-trade baby to the great joy of its joint fathers, Underwood and Simmons? We are sure they wish the baby was dead, or that it had never been born, but they do not see how they can kill it without a great scandal politically. Won't someone help them out?

And, too, there are a lot of other free-trade babies whose political father, the Democratic majority, would gladly get rid of if it could be done by some skillful politician without any public political scandal.

FORCES UNITING FOR REAL NATIONAL PREPAREDNESS.

THE President and Congress are committed to National Preparedness. Very recent events leave no doubt as to where the country stands. The people demand it, and Congress dare not oppose the popular will.

A plant to take nitric acids from the air, for explosives in war time (and for fertilizers in peace), is favored in a recent committee report to Congress. It is recognized that without such a plant, to be located in the interior, far from vulnerable seacoast points, this country would be helpless in case of attack by any foreign foe. The logic of the situation suggests to those who have made comment that the location for such a plant will probably be at Muscle Shoals, on the Tennessee River, where a great hydro-electric development is of easy construction. Favorable Congressional action toward this end is confidently expected to be taken soon.

Clearly expressive of the country's conviction is the action of the mayors of 250 American cities, meeting in St. Louis last week as a National Defense Conference. There were Mayors from all over the country, East, West, North and South. They were all for preparedness, and among the resolutions adopted was this:

Resolved, That we approve and recommend the immediate formulation of plans by the Federal Government for the organization and mobilization of the physical resources of the country; and to that end, among other things, we specifically recommend that all arsenals, ordnance, rifle and other munition-producing plants supported by Federal appropriation be located at a distance from the Atlantic and Pacific seaboards and from the Canadian and Mexican borders, as recommended in the recent report of the general staff of the army.

The necessity for establishing munition plants away from the seacoast was first pointed out by the MANUFACTURERS RECORD months ago. The folly of depending upon iron and steel plants located along the Atlantic seacoast, within easy striking distance of an invading army, these plants being dependent almost wholly upon the Lake Superior iron ores, exposed to capture or isolation in time of war, and upon the nitrates of Chile for the manufacture of explosives, is everywhere recognized now.

There should be many iron and steel plants in the sheltered interior, which a foreign enemy could scarcely reach. There should be munition factories, including powder plants, in the center of the South, where water-powers and every kind of raw material may be had.

These are the plans the MANUFACTURERS RECORD has urged week in and week out. The suggestions have carried conviction. Congress and the Mayors have voiced the country's determination. These reports and resolutions, and the practical start made by Chattanooga business men in forming an iron and steel plant the other day, mark the beginning of a nation-wide movement to carry out the preparedness plans the MANUFACTURERS RECORD has suggested as essential to any form of National Preparedness worthy of the name.

ROADS: A MEASURE OF A COUNTRY'S ENTERPRISE AND INTELLIGENCE.

RICHMOND and Washington papers have been bemoaning the impassable condition of parts of the road between those two cities, and well they may. It is a pity that the county officials and taxpayers in that section, as well as in many other places, cannot be sent down to Florida to study a State of which it has been said: "It is literally afire for good roads." And in that State good roads really mean good roads. Counties all over the State are vying with each other in building permanent highways, which are revolutionizing the State. At present substantial brick roads seem to have the call, and hundreds of miles have been completed and other hundreds are under construction or projected. Florida intends to be known far and wide for a magnificent highway system. It is an object lesson

and should be studied by the whole South, but any State that wants to keep pace with it will have to do some very lively hustling. It is an infinite pity that such splendid highways as Florida is building do not extend over the whole South.

A State's virility and enterprise, its intelligence and energy may largely be measured by its roads. On this basis some Southern counties rank very low.

ONE ILLUSTRATION OF VAST POTENTIALITIES IN RECLAIMING WET LANDS IN THE SOUTH.

CREATING land values, creating enormous railroad traffic and developing a center of agricultural prosperity in a region which had been regarded by many as almost hopeless is the story of what has been done around Sanford, Fla., by a unique system of irrigation, drainage and subaeration of land at one and the same time. It is an interesting illustration of how "acres of diamonds," as a popular lecturer puts it, are to be found at many points where, except to the man of initiative, the dreamer who makes his dreams come true, there are no opportunities offering for development.

The Sanford region of Florida was, many years ago, hit hard by the great freeze which destroyed the orange groves of that section. Many people thought that was the end of Sanford's prosperity. But one man, through a study of an interesting experiment, found how the soil of that section could be subdrained, subirrigated and subaerated through the use of artesian wells and a piping system. The amazing results that have followed his work are indicative of what has been done in hundreds of places throughout the South and what may yet be done in thousands of other places. Not all of these places can duplicate Sanford's raising of celery or lettuce, or its system of irrigation and drainage, but in thousands of other places are to be found potentialities of one kind or another as interesting as those created by energy and study at Sanford.

A few years ago the Florida superintendent of the Atlantic Coast Line, in a letter to the MANUFACTURERS RECORD, stated that his road had received as high as \$1500 freight on the products raised on one acre of Sanford's celery land. While this is far beyond the average, it shows what has been done in that section. Stretching along the splendid brick highways of the Sanford region, for mile after mile, are celery fields yielding an enormous volume of high-class freight to the railroads. These lands give to the growers profits which have brought about land values that are almost staggering to those who think of the days when such land could have been had for a few dollars an acre in place of prices that now prevail for this developed celery land—from \$500 an acre up, and sometimes it is said as much as \$1500 an acre.

There are about 50,000,000 acres of swamp and overflowed lands in the South, a large proportion of which can be reclaimed by drainage, as was this productive land around Sanford. In the aggregate some millions of acres of land have been reclaimed, but there are many millions still overflowed offering opportunities to the capitalist and to the investor.

These overflowed lands, which in most cases are worth but a few dollars an acre, when properly drained and made available for farming, advance to \$100 an acre or more. And if the 50,000,000 acres of wet lands in the South could all be properly drained, they would advance in value from the few million dollars which they today may be worth to \$5,000,000,000 or more.

These wet lands, when drained and put under cultivation, can produce, on the average, anywhere from \$60 to \$100 per acre per year, or nearly twice as much as the total value of the corn crop of the United States, or three times as much as the value of the best wheat crop ever raised, or of the most valuable cotton crop ever sold.

Every individual development, such as that around Sanford, and this is typical of hundreds in different parts of the South, though not all have produced such phenomenal yields as at Sanford, is an object-lesson which should stimulate the interest of public men, of private capital and of great contracting firms.

Here is an opportunity for the actual creation of

at least \$5,000,000,000 of wealth, with an annual production of at least one-half of that amount, even after allowing that some portions of these lands will not be under cultivation every year.

HIGHER APPRECIATION NEEDED IN MANY NEWSPAPER OFFICES OF WHAT IS NEWS.

THE tendency of newspapers to elaborate on the sensational murder or suicide or other crime and give comparatively little attention to the upbuilding forces that make for human advancement was pointed out last week by the Charlotte Observer, which said:

The Observer was interested in the manner in which the story of the \$300,000 auditorium at Black Mountain was handled by the morning papers of the State. One of these elaborated it on the front page; another gave it first-place prominence; one had it on the inside, with a display heading; another placed it inconspicuously on a back page with a single-line head, and one did not print it at all. On the front page of all these papers the story of the wife-murder in Burke county was given the big head. There seems too much of an inclination on the part of the North Carolina papers to minimize constructive news to the mere commonplace yellow variety. The Black Mountain intelligence was the finest piece of constructive news given to the press in many days.

This story was indeed a big piece of news. Its importance could scarcely be exaggerated, for it told of the most daring scheme ever undertaken in America to create a musical center, and this enterprise, backed by strong men, proposes to make Western Carolina one of the world's greatest musical centers. That was a piece of news which deserved big display headings, top of column, front page, in every North Carolina paper. In some of them it received the treatment it deserved, but the Observer intimates that a murder story led the day in many of them.

Some years ago the late D. A. Tompkins, who then owned the Observer, laid down a rule that constructive, upbuilding things deserved and should have more prominence than sensations. "If," said he, in substance, to some of his men, "you want to feed our readers on sensational murders, keep a man stationed at the Chicago morgue. He can fill the paper every day with horrors if that is what you are after. If a few negroes or disreputable white men or women get into scrapes and cut each other up, that is not news to be 'played up.' It is worth just about one or two lines merely to mention the fact, and nothing more. But if a farmer improves his land and raises a big crop, if a new mill is to be built, or a school or church established, if mill villages unite for local betterment, if anywhere in the South new enterprises are established showing the advance of this section, then these are the news things to make the most of. And always remember to keep the Observer clean and wholesome, that it may safely be taken into any family. Make it," said he, "clean, make it a power for good and a power for upbuilding the city, the State and the South."

If D. A. Tompkins' teachings and example could be followed in every newspaper office in the country, and especially in the South, a mighty revolution for good would be wrought.

SOYA-BEAN OIL TRADE OF HULL, ENGLAND.

IN view of the widespread interest in soya beans and the opportunity which they present to farmers and to cottonseed-oil mills, the following report by United States Consul Charles M. Hathaway, Jr., of Hull will be of value in the South:

The United Kingdom imported 175,136 tons (one ton equals 2240 pounds) of soya beans last year, according to preliminary reports, as against 71,161 tons in 1914 and 76,452 tons in 1913. Practically all of these were crushed in England—the bulk in Hull. Hull alone imported 135,919 tons in 1915 (preliminary figures), as compared with 64,911 tons in 1914 and 63,046 tons in 1913.

Beans were quoted at \$38.93 a ton in January, \$40.15 in March, \$40.75 in September and \$68.13 at the end of the year. Soya oil, beginning the year at \$6.79 a hundredweight (112 pounds), advanced to \$7.30 in May, but dropped to \$6.37 in June and to \$5.60 in July and August; early in October it went up again as high as \$7.30, but dropped back to \$6.79 at the end of the month; it advanced again, however, and at the end of December reached its highest point, \$9.73.

WILL GENERAL MILITARY TRAINING BE BENEFICIAL TO INDIVIDUALS AND TO THE NATION?

FOR some years it has been universally recognized among business men that there has been a deterioration in the boys of today as compared with boys of former years. No man can study the faces of the boys that congregate on street corners in villages, towns and cities without being depressed and distressed over the stamp of dissipation and lack of strength of character seen in so many.

To a large extent the boys of the present seem to have but little regard for law and order and a very small sense of responsibility, and they are very poorly equipped for work of any kind. Fortunately, this is not true of all boys, for if it were our country's doom would be sealed. It is a blessed truth that thousands of boys and young men are just as upright, just as hard working and just as devoted to duty as the boys of other years, but the proportion seems to be growing smaller as compared with those of whom a teacher who has had the training of many hundreds of boys during the last quarter of a century recently said, "The majority hardly seem worth killing."

Our system of government and our system of home training, or the lack of home training, and the freedom which runs into license of sensational papers of the day all tend to lessen the boy's sense of responsibility and his respect for parents, for the law and for those in authority. It is easily seen by every man who studies these conditions that fundamentally our system of education and training is wrong. Under this system a very large proportion of the boys of the day are being doomed to everlasting ruin.

Many who have studied these conditions feel that Germany's efficiency in business matters is largely due to the military training every German boy must undergo. They once thought that the two or three years given to military training of German boys was time wasted, taken out of their lives to their own disadvantage. But the more they study the value of military training the more they seem impressed with the virtue of strict military discipline in mental, physical and moral development. Boys who pass through such a discipline get a new appreciation of their relation to other men and of their responsibility to all men and learn to discipline their minds and their bodies.

In discussing the question of "National Preparedness" Charles Catlett of Staunton, Va., in a letter to the MANUFACTURERS RECORD brings out very strongly these points. In it he says:

In the matter of preparedness there is one fact that may not have been overlooked, but which I do not think has been sufficiently emphasized, and that is the advantage to the individual and to the country at large from the character of training which is secured by the man who submits to a reasonable amount of military control and instruction. While I appreciate that it would not be possible to get the consent of this country to put its young men through a course of military training on the ground that it would be good for them, still if we do put them through such a course of training on the ground that the country needs them, the effect of such training is to make them so much more efficient all the rest of their lives in whatever walk of life they may be called; that, in my judgment, the total expense of such instruction and training is far more than made up to the country.

Before I went to Germany I had been led to think that the three or four years that every German was required to give to the army was so much time absolutely wasted and that it was taken from the best years of a man's life. While I think that in Germany the military training has gone too far, yet I am strongly of the opinion that Germany's rapid strides in industrial developments have been due quite largely to the universal military training, and not in spite of it.

The ordinary youth of this country does not receive the right sort of training and is not amenable to the right sort of discipline. I think the country would go to the dogs if it were not for the influence of the public schools. Children are not properly trained and disciplined at home.

But the public schools do not go far enough, and every man who was required to give the small amount of time required by Garrison's plan for the Continental Army would be worth so much more the rest of his life, on account of that training, as to fully justify the costs incurred in that connection.

However much we may oppose the militarism of Germany, however much we may desire that our country should never reach a point where the military spirit will become as dominant as it is in that country, we are compelled to recognize that military

discipline can be made of very great value to a boy or a young man. This is why schools and colleges throughout the country which give military training are so popular and so successful in the character of work they do. The subject is worth very close study, for if a tendency to deterioration, to disregard of authority, lack of respect and discipline, seen so largely in the boys of the day, can be stemmed and a higher development brought about by military training, then the profit in the betterment of mankind will exceed the cost and the two or three years' time given to military training may prove a strong factor for success, morally, physically and financially, of the boys who are compelled to undergo this rigid discipline.

NOT DEAD YET.

"I DID not raise my boy to be a soldier." No, of course not; you raised him to be a coward, who would rather see his mother or sister outraged or murdered than be a fighter and protect them. What does the boy think about

I want to be a coward
And with the cowards stand

When honor and duty and the protection of mother and sister call him to heroic work?

And what, too, does the real mother want her son to be—a shirker and a coward or a man?

Let someone propound these questions to an audience whenever anyone gets off that silly stuff, "I did not raise my boy to be a soldier," and the answer will come so prompt and so strong as to show that honor and manhood are not yet dead.

INDUSTRIAL PROGRESS IN SOUTHERN CITIES.

THE Census Bureau has issued a preliminary statement of the census of manufactures for the following Southern cities:

Greenville, S. C.—Both owned and borrowed capital invested in industrial enterprises in Greenville, as reported in 1914, was \$3,003,000, a gain of \$1,073,000, or 86.7 per cent., over \$1,930,000 in 1909, producing an output valued at \$3,902,000 in 1914 and \$2,142,000 in 1909, the increase being \$1,760,000, or 82.2 per cent.

Charlotte, N. C.—Capital invested was \$11,808,000 in 1914 and \$9,451,000 in 1909, a gain of \$2,357,000, or 24.9 per cent., while the value of its manufactured products increased from \$10,460,000 in 1909 to \$10,893,000 in 1914, a gain of \$433,000, or 4.1 per cent.

Sedalia, Mo.—For 1914 the amount of capital invested in manufacturing was \$2,386,000, a gain of \$40,000, or 1.7 per cent., over \$2,346,000 in 1909. With this small percentage of increase in invested capital the value of its manufactured products increased \$589,000, or 25.2 per cent., the amount for 1914 being \$2,922,000 and for 1909 \$2,333,000.

Nashville, Tenn.—In 1914 the amount of capital reported invested was \$28,906,000, a gain of \$1,086,000, or 3.9 per cent., over \$27,880,000 in 1909. Nashville's manufactured products were valued at \$33,276,000 in 1914 and \$29,649,000 in 1909, the increase being \$3,627,000, or 12.2 per cent.

New Orleans, La.—The capital invested in manufacturing enterprises, as reported in 1914, was \$53,989,000, a decrease of \$2,945,000, or 5.2 per cent., over \$56,934,000 in 1909, and the value of manufactured products decreased \$9,163,000, or 11.6 per cent., during the corresponding period, the amounts being, respectively, \$69,631,000 and \$78,794,000.

Recent reports issued by the Bureau of Census, Department of Commerce, contain a preliminary summary of the manufacturing census for the following Southern cities:

Amarillo, Tex.: The 36 manufacturing establishments located within the corporate limits of the city in 1914 had an aggregate capital investment of \$1,094,000, producing an output valued at \$986,000.

Waycross, Ga.: In 1914 the capital invested in 27 manufacturing enterprises was \$528,000, a decrease of \$230,000, or 38 per cent., over the \$868,000 invested in 21 establishments in 1909. With this

large decrease in invested capital the value of its products was \$2,086,000 in 1914, and \$1,203,000 in 1909, a gain of \$883,000, or 73.4 per cent.

Texarkana, Tex. and Ark.: The capital invested, as reported in 1914, was \$2,184,000, a gain of \$302,000, or 21.9 per cent., over \$1,792,000 in 1909, while the value of its manufactured products in 1914 was \$3,126,000 and \$2,646,000 in 1909, the increase being \$480,000, or 18.1 per cent.

Denison, Tex.: Denison showed a decrease of \$56,000, or 5.1 per cent., in the amount of capital invested in manufacturing in 1914 over 1909, the amounts being, respectively, \$1,052,000 and \$1,108,000. For the same period the increase in the value of its manufactured products was \$755,000, or 67.2 per cent., amounting to \$2,069,000 in 1914 and \$1,314,000 in 1909.

SAVANNAH'S NEW SUGAR REFINERY.

Plant of 1,000,000 Pounds Daily Capacity Under Contract, to Be Completed December 1.

New York, March 6.—[Special.]—William Morris Imbrie and their associates have completed plans for financing the construction of the proposed sugar refinery to be built at Savannah, Ga.

Contracts have been made with the Westinghouse, Church, Kerr & Co. of this city for the construction of the refinery and plant, which call for its being ready to operate by December 1 of this year.

It is proposed to capitalize the corporation at \$2,000,000 of 7 per cent. cumulative preferred stock of a par value of \$100 and 20,000 shares of common stock of no par value.

The preferred stock is preferred as to assets as well as to dividends.

Owing to favorable contracts for securing the machinery, building site, railroad tracks, etc., the cost of the refinery will be remarkably low.

The refinery will be built with a working capacity of 1,000,000 pounds per day, or 150,000 short tons per annum. This is equivalent to an output value of \$15,000,000 a year.

The refinery will have an advantageous location on tidewater near Savannah, and raw sugar can be brought directly to the company's docks.

Mr. B. A. Oxnard is president of the Savannah Sugar Refining Corporation, and the board of directors comprises B. A. Oxnard, president, Savannah, Ga.; Henry T. Oxnard, New York; James G. Oxnard, vice-president, New York; Robert Oxnard, San Francisco; James Imbrie of Wm. Morris Imbrie & Co., New York; Mills B. Lane, president Citizens and Southern Bank, Savannah, Ga.; John H. Hunter, president Savannah & Northern Railway, Savannah, Ga.; R. M. Hitch, attorney, Savannah, Ga.; W. S. Pardonner, secretary and treasurer; B. O. Sprague, general superintendent.

The Underwriting Syndicate says: "Savannah is geographically very favorably situated for getting raw material from Cuba and Porto Rico, the principal sources of supply, not only because of its greater proximity to these countries, but also because it offers low port charges and favorable outward cargoes to vessels bringing in the raw sugars, with consequent very favorable freight rates inward on these sugars."

"There is also quick and cheap transportation from Cuba by ferry to Key West and northward over the Florida & East Coast Railway. The Savannah Sugar Corporation is excellently located to take advantage of this freight route."

Mr. B. A. Oxnard, president of the company, says: "At the present time there are in the United States 15 sugar refineries. Twelve of these refineries are located on the Atlantic coast at Boston, New York and Philadelphia, four are on the Gulf of Mexico and two are on the Pacific coast at San Francisco."

"The annual consumption of refined sugar per capita in the United States is about 85 pounds. These figures, therefore, show a total consumption in the territory naturally tributary to Savannah of about 500,000 tons of sugar a year, or three times the output of the Savannah refinery."

"Owing to a particularly favorable combination of circumstances, the refinery can be erected, ready for operation, within nine months from the commencement of building operations, which is very much less than ordinarily would be the case."

The Most Unprepared Country on Earth

TESTIMONY OF LEADING ARMY OFFICIALS AS TO A TOTAL MOBILE ARMY OF 30,000 SOLDIERS, AND CONCENTRATION OF MUNITION PLANTS IN EAST

[The testimony of army officers as given below, which has not except in the Congressional Record been published in such detail, shows that every contention of the Manufacturers Record in regard to our lack of preparedness is fully sustained by the foremost army men of the country. It is incumbent upon every intelligent man to make a careful study of the amazing facts set forth by General Crozier and others.—Editor Manufacturers Record.]

By THOMAS F. LOGAN

Washington, D. C., March 3.

Every point made in the editorial arguments of the MANUFACTURERS RECORD showing the vital need for a change in the condition wherein 95 per cent. of the iron and steel industries and munitions factories are dependent upon Lake Superior ores has been completely sustained by the expert testimony of officials of the War Department and the principal chiefs of the army. The position taken by the MANUFACTURERS RECORD is now the official position of the military branch of the United States Government.

The testimony of the experts has shown clearly the danger of a continued sole dependence upon Lake Superior ores. It has given indubitable proof that troops can be landed upon the shores of the United States; that the munition factories in the East could be destroyed; that the defeat of the American navy by a larger and stronger foe would result in the blowing up of the forts which protect the area in which most of the munition factories are now located.

The remedy proposed by the army experts for this vital weakness of the United States is the same remedy proposed by the MANUFACTURERS RECORD. It is given herewith in the words of Brigadier-General William Crozier, Chief of Ordnance of the United States Army, and recognized as the greatest authority in the United States on ordnance matters. Appearing as a witness at the hearings of the House Committee on Military Affairs on the army bill late in January, General Crozier referred to the need for a Government munition plant away from the danger zone. Aside from having a plan of its own safe from attack, the Government would thus have a basis for determining whether the prices charged by private munition makers were reasonable or excessive. Again, before the Senate Committee on Military Affairs, late in January General Crozier said:

"The Government ought to manufacture a portion of all classes of material and to train officers in the full knowledge of the production of the material which we have to use so that the Government would understand about the prices and be in a position to recognize an exorbitant price and possibly refuse to pay it. I should think that the Government plants ought to have a somewhat greater capacity than would be normally operated, so that in the case of a given contract it would be in a position to refuse to make an award, and could manufacture the material in its own establishments, and hope that the lesson would be effective when the next bid should be submitted. Beyond that point, I think that in order that we should have a capacity for expansion our reliance should be upon private manufacturers."

At this point Senator Weeks of Massachusetts, a member of the committee, asked whether the Krupp works or any similar works in Europe are subsidized in any way or whether there is an agreement to take a certain amount of output. General Crozier replied:

"I am inclined to think, Senator, that such establishments as that, including their small-arm factories, as well as the great artillery shops at Essen—the Krupp works—receive various kinds of governmental aid. I have been told, for illustration, that this sort of thing has been done: When some non-manufacturing country has required war materials, such as rifles or artillery, or anything else, the German establishments have been encouraged by their country to take those orders with something like an assurance that if the price made would have to be too low to be profitable, the Government would see that it should not be unprofitable. That is for the purpose of maintaining the plants in existence. That is believed by some persons who are generally very well informed, and I can only give it to you as that kind of a statement."

In this way General Crozier suggested the means by which the United States Government itself could encourage the location of munition and even steel and iron plants in the South and Southwest, where they

would be safe from attack and where ample raw material would be available.

Senator Weeks then remarked:

"One other question I wanted to ask you, General. I think it is generally agreed that having so many of our establishments for manufacturing arms and equipment on or near the coast is ill-advised. Is there any way to encourage the building of such plants between the Alleghenies and the Rocky Mountains?"

General Crozier—"I asked the proprietor of a plant of some size the other day, who was making a certain kind of equipment for soldiers of European Governments, whether he would consider moving his plant out west of the Allegheny Mountains, and he said he would, under such terms as would insure him reasonable employment for it after he had got out there. Of course, before inducing a plant of the size of this one at Bridgeport for the manufacture of rifles to move to any other part of the country, we would have to make promises that would be very difficult of fulfillment afterwards. I think that something might be gradually done in the way of giving preference in placing orders to such plants as would possibly be well situated with reference to defense, so that it would be seen that it was the policy of the Government to take that into consideration; but in order to do that release would have to be granted from the requirement of accepting the lowest responsible bidder for the best and most suitable article, which are the terms under which we have to make our purchases now."

General Crozier expressed the opinion that munition factories should be limited to a certain territory. Unless we would defeat our own ends, he said, the Government would be justified in giving the preference to factories that were in safe territories and abandon competition to that extent.

"I think this important, don't you?" asked Senator Weeks.

"Yes, sir, I think it is of importance," replied General Crozier. "Nearly all of our manufacturing arsenals, as well as the private manufacturing plants, are situated where we would not place them. They were placed there, of course, when pretty much all of the country was east of the Allegheny Mountains, and we never considered anything so expensive as moving them. It is all we have been able to do to get sufficient appropriations to keep them going."

Senator Weeks suggested that the plan he had in mind was to encourage the construction of additional plants where they would be relatively safe, and General Crozier said that this would be advisable, as the War Department had been deeply concerned and disappointed to see the way these large new factories have grown up at places where no officer of the Government would advise that they should be placed.

The following interesting colloquy, sustaining the position taken by the MANUFACTURERS RECORD then took place between Senator Thomas of Colorado, Chairman Chamberlain, Senator Fletcher and General Crozier:

Senator Thomas—"Where are our plants now?"

General Crozier—"At five arsenals, two of which are in Massachusetts, one of them just above Albany, one at Philadelphia, and one at Rock Island Arsenal, in Illinois, on the Mississippi River. In addition to these, there is an army powder factory in the northern part of New Jersey, a naval powder factory 20 miles below Washington on the Potomac River, and the Washington Gun Factory at the navy-yard."

The Chairman—"And they have an arsenal at Benecia, Cal.?"

General Crozier—"Yes, sir; but that is not a manufacturing arsenal; it is for storage and issue and repair. The private factories, the largest ones are at New Haven and at Bridgeport, Conn.; at Ilion and Utica, N. Y., and there is one large one in the interior of Connecticut, one in New Jersey, one in Northeastern Pennsylvania, two close together on the Delaware River below Philadelphia, a large powder factory on the Delaware River farther below, and a large contributory factory near Richmond. There is a small-arms ammunition factory in the eastern part of Mas-

sachusetts, one at Bridgeport, one at New Haven, and one, I am glad to say, out in Cincinnati. Those are the principal ones. That does not include them all. I may have omitted some others, but they are the largest ones."

The Chairman—"They are all easy of access to the coast line?"

General Crozier—"Most of them are; yes, sir."

Senator Fletcher—"The material can be found in places like Birmingham, where they could have coal and iron and timber, too?"

General Crozier—"Yes, there is no factory for war material in that vicinity that I know of. That is, distinctly war material."

Major-General Arthur Murray, of the United States Army, retired, complimented General Crozier's testimony before the Senate committee in this manner:

"Considering the length and vulnerability of our tremendous coast line, the number of rich cities located thereon, the facts that the term coast defenses as ordinarily understood is a misnomer, that they are in reality only harbor defenses, and that however strong they protect the coast line and the cities in their rear from only such of an enemy's vessels as may come within effective range of their most powerful guns, it will readily be seen that if either the navy, the coast artillery or the mobile regular army fails in its role as above outlined, the financial, not to mention any other loss to our country, would be incalculable. Such money as may be expended upon the navy, the coast artillery and the mobile regular army to prepare them to fulfill the above-described roles is, therefore, in the nature of an insurance premium against the risk of such loss, and as the premium on any insurance risk increases as the risk increases, so may it be expected that the cost of preparedness of the navy and the regular army to fulfill their roles will be correspondingly great. If the country is unwilling to pay such a premium, it, of course, assumes the responsibility for all loss in the event of war."

Col. Edwin F. Glenn, Chief of Staff of the Department of the East, First Division, told of the real danger which confronts America by reason of the concentration of its industrial resources in the eastern area of danger. He said:

"In our past legislation, as indicated above, in emplacing armaments and providing other harbor defenses, we have never provided for the back-door protection of this armament. By this I mean protection against small raiding parties landed from an enemy fleet. Such raiding parties today are considered small when they have as many as 10,000 men, and I may add in this connection that they contemplate sending with such raiding parties guns as high as six-inch caliber, with an effective range of not less than 15,000 yards. This protection can only be furnished by the mobile army, which must be provided in sufficient numbers for this purpose, otherwise these harbor defenses are precluded from performing their proper functions; that is, the protection of the cities which they guard and the navy which may have taken refuge in the harbor where they are located. In a word, without the mobile army protection this armament becomes a menace to the cities and to the navy seeking refuge there. It is hoped, of course, that before these forts containing the harbor defense armament are captured the personnel will blow up the guns. It is not believed to be good policy to establish very expensive armaments with the practical certainty that it will have to be blown up to prevent its falling into the hands of the enemy because we fail and neglect to provide the well-recognized necessary mobile defense."

Senator Weeks—"You suggested the possibility of a foreign nation sending an army of 400,000 men ashore. How much tonnage would it require to send 400,000 men and all the equipments—that is, food, etc.—that would be necessary for such an expedition?"

Colonel Glenn—"They would not figure very largely on food, Senator, especially if they were coming to this country; so that I think you can eliminate that."

Senator Weeks—"You have got to have food—"

Colonel Glenn—"I can only give you that approximately, sir. The English when they went to the Dardanelles, found that their transports were not loaded to carry out the desires or the plans of the commanding general. So they sent this expedition to Alexandria, where they were disembarked and reloaded. I think they had 126,000 men on that expedition, whom they re-embarked, and for whom they used 98 ships; I think it was."

Senator du Pont—"Colonel, could I interrupt you here to

ask you to state the distances? What is the distance from England to Alexandria, Egypt, as compared to the distance across the Atlantic?"

Colonel Glenn—"I would have, Senator, to look that up. I am very poor at remembering figures, but I think there is practically no difference."

Senator Weeks—"I want to ask you a little more in detail about this expedition. How many horses would you send with 400,000 men?"

Colonel Glenn—"I could not answer that. As a matter of fact, under our organization now we have about 8000 animals to a division."

Senator Weeks—"Colonel, if you were put in command of an English army of 400,000 men to invade the United States, would you sail, assuming that you knew that the United States has its present navy, until the navy of the United States had been crippled?"

Colonel Glenn—"No, sir; I do not think I would sail. I certainly would not approach my fleet closer than 500 miles. I would certainly have a convoying fleet, which I could amply afford to have."

Senator Weeks—"How would you feel about sailing at all if you knew there were 500 submarines and ample mines in the harbors of the United States?"

Colonel Glenn—"I do not have the fear of submarines, myself, that a good many people in this country have. As a matter of fact, our information is that England several months ago had captured over 90 of these submarines, and a very recent report indicates that the submarines that were sent out to attack the British fleet in maneuvers were all captured. I do not think that I would attempt to land, for instance, at a harbor like New York or Boston, where these things would be prepared, because, as I stated, we have 116 landing places between Boston and Chesapeake Bay that are perfectly good natural landing places."

Senator Weeks—"How long would it take you, supposing there were no opposition, to land 400,000 men and the animals and everything that goes with such an expedition?"

Colonel Glenn—"It depends altogether on your facilities ashore. By that I mean that you would not attempt to land—I do not think anyone would attempt to land—those 400,000 men in one expedition. I think the expedition would be divided up somewhat. But I think, or my recollection is, that the English expedition of 126,000 men was landed in about 24 hours."

The MANUFACTURERS RECORD has frequently pointed out that there is need for the development of nitrate or cyanamid plants in the South which would be useful in time of peace for supplying fertilizer to the cotton growers and farmers, and useful in time of war for furnishing nitrates to the Government to be used in the manufacture of explosives.

This argument was completely sustained by General Crozier when he appeared before the House Committee on Military Affairs, having previously appeared before the Senate committee. General Crozier said that water-power should be developed to establish such a plant, and that private individuals now controlling the process known as the arc process and the cyanamid process for the development of nitrates from the air would be glad to work in conjunction with the Government in furnishing nitrates needed for explosives.

The Chairman—"General, what would you think of a proposition to appoint a committee of three officers of the army to examine the different sites where this power can be obtained—the power is controlled by the Government, anyway—with a view to ascertaining where is the most feasible place for a plant of the kind you speak of?"

General Crozier—"You mean with reference to a governmental plant?"

The Chairman—"Yes, with reference to a governmental plant, or with reference to entering into a contract with private parties, so that the plant could be used if the occasion for its use should arise."

General Crozier—"I think that would be a very good plan and that it would be a useful step in the right direction, provided there was not something else in prospect which might render that, perhaps, unnecessary. I think you are aware that there has been before both Houses of Congress bills designed to empower the Secretary of War to grant such permits for the use of water-power which might be developed in connection with navigable streams as would make it worth while for private parties to embark in the development of the power with proper and sufficient prospect of profit to induce them to do it without any further governmental aid. I am told, although with how much authority it is difficult for me to say, that if one of the pending bills would be passed giving the Secretary of War the right to grant this kind of a permit that my report speaks of, there are capitalists ready to go into this matter without any further governmental assistance and establish these plants for the purpose of manufacturing commercial fertilizer. I think that if that were true it would be quite likely that the permits could be accompanied by the condition that the Government would have sufficient hold upon these plants to insure that it could get what it wanted from them at reasonable prices, both in peace and in war."

While General Crozier was on the stand Representative Quin of Mississippi asked why the Government did not manufacture powder at the Benicia, Cal., arsenal. General Crozier said that such a step had been considered more than once. There were difficulties, however, in obtaining power while coal was expensive there.

Moreover, steel is not produced in any large quantity. None of these difficulties would be encountered in the establishment of such a plant in the South or Southwest, where there is ample raw materials.

It was shown at the different hearings before the Senate and House committees that there is ample raw material in the South and Southwest to supply a great Government plant; that the private establishments are unmindful of their own interests when they fail to locate in the South or Southwest, because the Government eventually may favor with contracts only those plants safely located, and that the present condition of the country invites danger and attack. Major-General Leonard Wood summed up the whole situation in this manner:

"We are engaged at the present time in the development of the coast defense of the Atlantic. Unless one has gone into the matter you cannot realize what the coast defense of this country would mean if we lost sea control. The idea that troops cannot be moved overseas is the idea of the man who does not know what he is talking about. It is the easiest and most convenient way of moving troops. Troops can be landed almost wherever it is desired to land them, except under the guns of our seacoast batteries."

"We have in all about 31,000 mobile troops in the continental United States; I mean cavalry, infantry and field artillery. The militia numbers about 120,000 men and about 8800 officers on paper, or a total of about 130,000 troops."

"I believe I compliment the condition of the militia, or at least give it the fullest credit for what it can do, when I assume that it could place 60,000 fairly well-trained troops in the field in 30 days, properly armed and equipped."

"This force, in conjunction with the regular mobile force, if all of it was assembled—and it means stripping the entire country—would amount to, in round numbers, 90,000 troops. It would not be an army—it would be a military assemblage."

"There would not be in that body of troops an officer who had ever commanded more than a division in camp, and that division at peace strength."

"There would be no supply officers or transportation officers who had ever handled a force of that size."

"It would take time and much hard work to make an army out of this force, and when the work had been completed it would be only a small handful of troops in comparison with what would be needed. It would be without aviators, without adequate machine guns, without proper field artillery, without armored motor cars, ammunition batteries and material and other necessary things. And what area would this little force have to cover in case of a threatened attack upon the Atlantic coast? It would certainly be necessary to attempt to prevent an attack within the limits of what is known as the vital area; by this I mean the territory inclosed by a line commencing at Boston and running out around Watertown, Springfield and then to Watervliet, N. Y., and on, including Bethlehem and out at Baltimore. In that area are the great bulk, probably over 85 per cent., of our arms plants, cannon-making plants, powder plants, etc. Our coast defenses will not prevent a landing on our coast. Landings can be made by good troops under great difficulties. Take, for the purpose of illustration, the recent landing at Gallipoli. There were some 126,000 allied troops landed on the coast of this peninsula in the face of the most intense opposition, an opposition prepared long in advance and aided by all the devices of modern war. There are relatively few beaches and the coast was rough and precipitous, and yet they landed and stayed there for months. When we say that we have 90,000 men, that is all we have. We may develop others later, but this is the only force we could count on as reasonably effective within 30 days."

"Our preparation is really a preparation against war. I think if we make reasonable preparation and establish a condition of general military instruction, that it will be pretty difficult to get anybody to attack us. If we were attacked by any European Power, it would be undoubtedly an attack launched on the Atlantic Coast between Baltimore and Boston, at the great lines of communication and the great centers of wealth, in an area comprised within a line drawn, beginning at Boston and including our arsenals, our munition plants in Massachusetts, New York and Pennsylvania, and running out at Baltimore. That would include about 85 per cent. of all our arms-making and ammunition-making facilities. That would be the territory at which an enemy would strike. An enemy would strike at that territory in an effort to cripple our supply of arms and ammunition, and they would attack the main lines of communication running between the principal Eastern cities and from the Eastern cities to the West. We have nothing in the West which would concern an enemy very much in the way of arms or munition factories. We have the Rock Island Arsenal. We ought to have our arms and munition plants more scattered and some of them in the middle West."

Mr. Greene—"We will continue to hear, and we have heard, in the popular discussion of this matter the remark of President Lincoln, which has been frequently quoted, that an invader never could water his horses in the Ohio River. Of course, that is a patriotic sentiment, but, in your opinion, would an invader ever attempt to do that?"

General Wood—"It is hard to tell what he would do."

Mr. Greene—"In other words, would not the probable intention of an invader be to go straight to the locality you have indicated, and then, say, for instance, occupy that territory and levy tribute on the rich cities in that local-

ity? Would he not be more likely to do that than to try to go into the interior?"

General Wood—"He would probably hold New York and Boston, possibly the entire arms and munitions area from Boston to Baltimore, and exact such tribute as he wanted, then take whatever action might be necessary to prevent us from longer asserting the Monroe Doctrine. He would take anything he wanted. It would be just a question of how much he wanted. If we should be driven out of that comparatively small area, we would go back, practically to the condition of prehistoric man as far as arms are concerned."

"A great many of the supplies that we need in case of war come from other countries. Take nitrates, for instance. All our nitrates come from Chile. There is not a plant of importance for the manufacture of synthetic nitrogen in this country. We need synthetic nitrogen. We have to have it in huge quantities. All our nitrates come from overseas."

"Then take up another industry. We do not make any optical glass in this country. There is not optical glass sufficient in this country to equip a large army. It is particularly needed for the range finders, field glasses, etc. You could go on indefinitely with the enumeration of things of that kind, concerning the supply of which this country is in a very bad condition."

"The reason we could not make arms any more rapidly was because we could not get the high-speed tool steel. Why was that? It was because we could not get certain materials—antimony, etc. Those things indicate the need of a certain industrial organization behind the War and Navy Departments. The army and navy are just the edge of our war organization; behind are moral and industrial organizations."

New Building for National Bank of Suffolk.

The National Bank of Suffolk, Va., will open bids April 15 for the erection of a seven-story fireproof building, an illustration of which is presented on this page. The building will be 65x45 feet, with marble and terra-cotta exterior and walls of Roman architecture. It will be equipped with composition roof, steam



NATIONAL BANK OF SUFFOLK BUILDING.
SUFFOLK, VA.

heat, electric lighting and electric elevators. A safe deposit vault will be constructed on the first floor and a storage vault in the basement. Steel desks, filing cabinets, bookcases and other metal furniture will be installed.

Plans and specifications for the structure, which is estimated to cost \$100,000, are being prepared by Rossel Edward Mitchell of Norfolk.

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Turning Adversity Into Abounding Prosperity

COMBINED IRRIGATION AND DRAINAGE OPERATIONS AT SANFORD AND THE REMARKABLE RESULTS ACHIEVED—ONE ACRE OF CELERY HAS PAID IN ONE SEASON \$1,500 FREIGHT TO RAILROADS.

By HOWARD L. CLARK.

Sanford, Fla., February 29.

No better proof of the value of drainage and irrigation can be found than is illustrated by the wonderful trucking crops, principally celery and lettuce, that are raised in the Sanford celery region of Florida.

Under the Sanford system of subirrigation, subaeration and subdrainage, one acre has produced over 70 tons of vegetables in a single growing season of nine months, and actual net profits of over \$1000 an acre have been made by the grower, while the railroads are known to have received as high as \$735 freightage from one acre of vegetables in this district. Indeed several years ago the superintendent of the Florida division of the Atlantic Coast Line wrote the MANUFACTURERS RECORD that his road had received as high as \$1500 from hauling celery produced over a single acre of land.

With the visible evidence of miles of celery and lettuce fields, it does not take much discussion to convince the uninitiated of the value of proper drainage and irrigation. So much for the facts as to the proven results of scientific drainage and irrigation.

The great development of this trucking region has been made possible by the peculiar natural advantages it possesses. Its soil is of a light sandy loam, which rests on a white sandy stratum, underlaid by a subsoil of clay or hard pan which is from two to four feet below the surface. The depth of this hard pan from the surface and the layer of sand between it and the topsoil, which for a long time was considered a curse to the country, makes available this system of drainage and irrigation and its successful operation and has proven to be its salvation.

A short history of the development of this system was given by J. N. Whitner, a pioneer celery grower of Sanford, before the meeting of the Florida Drainage Association, held last week in this city. Mr. Whitner said that in 1888 Rev. T. W. Moore, a Methodist minister, was the first to discover the value of subirrigation in this locality. From the only flowing well in Sanford at that time he dug a ditch along the road where it had given considerable trouble on account of the deep sand, and placed inverted in the bottom of the trench some V-shaped board troughs and then filled the ditch from the artesian well. The water running in the underground trough percolated through the sand to such an extent that the sand was kept moist, resulting in a hard-packed road. In a short time the health authorities came along and said the troughs had to come up because if allowed to stay there they would be the cause of a fever epidemic. In the meantime, however, some of the people in the neighborhood had been experimenting with that method of irrigation on some of their trucking lands which up to that time had been unsatisfactorily irrigated and drained with open ditches.

From the crude troughs of the early days grew the development of the pipe and tiling system of drainage and irrigation which contains the fundamental principles of successful drainage and irrigation in that they must be simultaneous. It was discovered that with this tiling system of drainage the water going down under the topsoil was, by capillary attraction, carried to the roots of the plants, and at the same time the water in moving through the soil acted as a plunger pump and carried air along with it, which is essential to plant growth and which was excluded by the older type of open irrigation ditches, which did not allow for drainage at the same time.

Of course, many mistakes were made in the beginning, such as insufficient drainage to take care of excess water in rainy weather and proper spacing of piping and handling of the water flow.

The success of this system was assured by nature

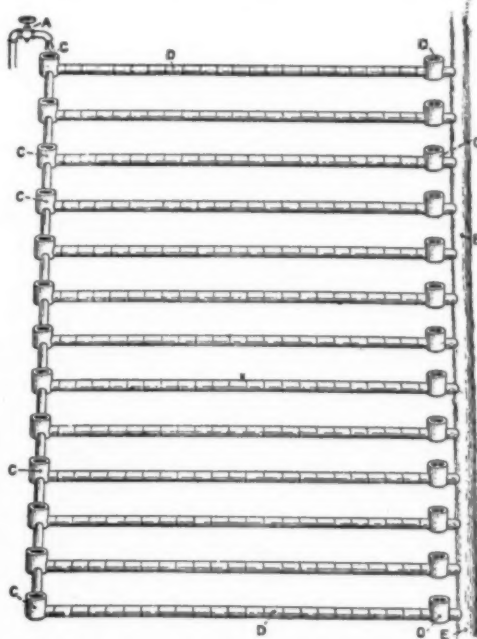
in providing a clay subsoil or hard pan two or three feet below the surface and covered with a fine white sand which sucks the water up and distributes it evenly over the topsoil.

But even with these advantages in soil formation, an abundant water supply was necessary, and the Sanford section, as in many other places in Florida, is blessed with the ability to produce artesian wells at a small cost. In the Sanford celery delta are over 2800 flowing wells, with no perceptible decrease in the strength of their flow since the early ones were bored 30 years ago.

All of the land in the Sanford region is nearly level, but with sufficient variation to afford excellent drainage. It is divided into small farms, five and ten-acre tracts predominating.

To lay out the drainage and irrigation system, the surveyor ascertains the highest point on the tract and there the well is usually driven, the average depth being about 100 feet.

Materials and equipment generally used for a five-acre tract are simple. First, a two-inch well is drilled, the average cost being about \$75. Then a four to six-inch pipe, known as the main, is usually laid on the highest side of the field. At the high end of the main, and connected with it, is located an 18-inch tile, which



DRAWING SHOWING SYSTEM OF SUBIRRIGATION AND SUBDRAINAGE.

A—Stopcock on pipe from artesian well.
B—Standpipes controlling inflow of water.
C—Rows of tile across field.
D—Drain channel.
E—Governing pocket to dam the water.

takes care of the discharge from the well. The main is water-tight, with pockets of four-inch standpipes usually 20 to 35 feet apart. From these pockets regular three-inch tile is laid across the field and into four-inch pockets on the lower side and from there down into an open ditch for carrying off surplus water. By plugging any of the crosslines at the main standpipe the amount of moisture in different parts of the tract is regulated.

Irrigation is obtained by the water seeping through the three-inch tiles which are run across the field. The joints are filled with sawdust, paper, etc., to keep the sand and dirt from working into the lines.

At the lowest side of the tract, and connected to the crosslines, are located the control boxes. They are made of cement, have a partition in the center with a hole through the lower side where the tile is connected to it, another hole in the partition 12 inches above the first hole and a V-shaped split in the top of the partition. Control boxes and feed mains are made water-

tight with iron nipples of various sizes used in making connections.

The system is usually installed by laying rows of tile 18 inches beneath the surface, or, according to depth of hard pan, 20 to 35 feet apart, running the short way of the field. A fall of about four inches in 330 feet is said to be sufficient to allow the water to trickle through without loss by friction.

During periods of rain the well is shut off and the crosslines of tile are turned from irrigating purposes to a complete drainage system by opening the control boxes to let water drain out.

The following list of materials needed for tiling an acre and the equipment necessary is given in a pamphlet issued by the Sanford Commercial Club:

3000 3-inch drain tile 12 inches long @ \$22.....	\$44 00
7 8-inch standpipes 2½ feet long.....	2 45
1 18-inch intake pocket at well 2½ feet long.....	1 50
7 22-inch controlling boxes.....	5 25
24 2x5-inch cast-iron nipples.....	1 68
2 sacks cement.....	1 10
100 feet 4x24-inch terra-cotta main.....	7 00
1 load of fiber or sawdust.....	1 50
Wooden plugs.....	50

Total cost of materials for one acre.....\$63 97

The labor necessary to install the system on one acre will cost about \$40, making the total about \$105 per acre.

The advantages of a small area subirrigated and properly cultivated is shown by the results achieved by one of Sanford's planters, who reports having made a clear net profit of \$2304.43 from the operation of his two-acre farm. The shipments amounted to 2323 packages, which weighed 86,710 pounds. The statement of his income and expenses as given in the pamphlet is as follows:

EXPENSE OF CROPS.

Fertilizer, 10 tons.....	\$420 00
Crate materials and seed.....	170 76
Labor and packing.....	380 00

Total expense.....\$980 76

INCOME FROM SALES.

Lettuce, 430 baskets.....	\$812 35
Celery, 729 crates.....	975 83
Beans, 22 baskets.....	24 89
Cucumbers, 29 baskets.....	24 47
Eggplants, 53 baskets.....	46 78
Sweet peppers, 104 crates.....	1,376 20
Cabbage, 36 crates.....	36 47

Total income.....\$3,345 19

Less expense.....980 76

Net profits.....\$2,364 43

The above was obtained from land said to have been prepared for the first crop in September, and the last shipments were made the 21st of July.

Variations of this system are claimed to be applicable to practically all drainage operations, and it is pronounced by experts to be the most scientific method in use for applying water to plant growth.

The accompanying illustration gives a clear idea as to how this combined drainage and irrigation system is constructed. Delegates to the drainage convention made a careful study of the method and were enthusiastic in their praise of the remarkable results achieved, which has made this section the most noted celery-producing region in America, as well as a great center of lettuce and other early vegetables.

Property-owners are now in some cases putting in a complete system of drainage and irrigation on land they have for sale, so that buyers can secure land ready for immediate work. Sanford, in respect to this character of development, seems to have set the pace for the country.

As one more illustration of turning an adverse situation to profit and plucking victory from apparent defeat, Sanford also shows what well-directed intelligence can achieve. Prior to the great freeze many years ago this was an orange-growing section. The freeze killed the oranges, but it stirred the people to study how to do other things, and out of the loss on oranges came the prosperity created by this remarkable vegetable development, due to a combination of natural advantages of soil and climate and the scientific systems for putting water where needed and taking it away when not needed.

Addresses of Unusual Interest.

The addresses made at the meeting and briefly mentioned in last week's dispatch were of unusual interest. Many facts of value to landowners and drainage movements throughout the country were brought out through these speeches and the discussions which were called forth.

Adverse reports regarding the soil survey of the Ever-

glades given out by the United States Department of Agriculture were roundly criticised by the members of the Drainage Association. During a discussion of this subject it was the unanimous opinion of those present that an egregious error had been made because on the lands in the Everglades drainage district that the Department of Agriculture pronounced unsuitable for cultivation bumper crops of vegetables are being produced today. It was brought out at the meeting that the muck of the Everglades is of practically the same formation and contains the same chemical analysis as the muck lands found in the Kalamazoo celery region, and is the same as the fertile muck lands of New York and New Jersey, and that notwithstanding the Department of Agriculture had given out the report that the muck soil of the Everglades was not of sufficient fertility to produce crops, by actual demonstration abundant and profitable trucking and farming operations are now under way in that section.

On account of the foregoing statements, the association unanimously passed a resolution requesting that the Department of Agriculture be urged to make a new soil survey of the Everglades drainage district in order to determine the true possibilities of that region.

Former Governor Jennings on Drainage in Holland and Florida.

Ex-Governor W. S. Jennings, in speaking on "Drainage in Holland and Florida," said in part that the meeting afforded an excellent opportunity for the discussion and study of one of the greatest problems that Florida has been confronted with, and the future of Florida and her splendid opportunities will largely depend upon the successful drainage of her "swamp and overflowed lands." The reason for this is evident when one recalls that more than half of the total area of Florida was granted to the State by the Federal Government as "swamp and overflowed lands," amounting to 20,210,000 acres.

The comparatively slight drainage in and around Sanford necessary to make the land available and to bring it to a high point of cultivation and desirable for habitation is illustrative of the drainage work necessary in Florida generally to make the swamp and overflowed lands highly productive and consequently valuable.

Mr. Jennings described the development and operation of the reclaimed lands in Holland, the formation of soil, the construction and handling of dykes, the construction and operation of main and smaller canals and compared the 16,000,000 acres of swamp lands outside of the Everglades with the development of the reclaimed area of Holland, estimated at 572,416 acres, and its annual upkeep cost of about \$6,000,000 a year, which is equivalent to about \$10.45 per acre per annum of general taxes derived from all taxable property, to which is added a drainage tax of 50 to 60 cents per acre on reclaimed land under cultivation.

The greater part of the area of swamp and overflowed lands lies outside of the Everglades drainage district, namely, 16,000,000 acres, all of which and nearly three fourths of the Everglades area, or an aggregate of approximately 19,000,000 acres, have heretofore been sold and granted by the State of Florida to individuals or companies.

Approximately 9,000,000 acres were granted to railroads in aid of their construction and upwards of 3,000,000 acres to canal companies, the work on which tended to aid in the reclamation project, and while the reclamation work may seem comparatively slight throughout the State, it was pointed out that the general water level conditions of Florida have been greatly changed and lowered by means of the railroads and canals already constructed. There are now thriving communities living on areas that previously to this work of internal improvement were frequently inundated, that are now habitable and large areas in cultivation, producing great quantities of valuable crops. In other sections, such as around Sanford, lands have reached a very high point of cultivation, productiveness, and of values, which illustrates the point that needs to be emphasized, that the swamp and overflowed lands in Florida, as a rule, are of the most fertile kind, most productive when made available and necessarily most valuable when brought into cultivation.

In summarizing the results of drainage in Holland and Florida, Mr. Jennings said:

"The Everglades drainage district alone, which is in process of reclamation, contains about 4,000,000 acres, and comparatively few acres thereof have been re-

claimed. The work so far done, however, is sufficient to demonstrate the fertility and productiveness of the soil. The value of the products is a marvelous showing. Upwards of \$600 an acre is reported to have been derived from some products on Everglades reclaimed lands per annum. Such lands can doubtless be purchased at \$20 per acre and upwards.

"In Holland the original cost of reclamation was borne entirely by the Government. In Florida only a slight and partial expenditure has been borne by the Government, the substantial reclamation work having been done by the purchasers of lands under the State's title. This is true in the Everglades. No funds are appropriated under the general taxation to aid in the reclamation of that section.

"The entire burden is being borne by the owners of the lands under the drainage tax law under the present policy of the State, which has been in vogue for the last several years, the State not having shared any part of the burden, the counties not sharing any part of the burden. Does not justice demand that in the absence of assistance from the State and the counties that the State and the counties should not demand of the unreclaimed lands assistance from such lands until they are in a tangible and available and cultivated state?"

One of the most important questions discussed at the convention was the best method of financing drainage operations and of securing proper laws and regulations regarding the organization of drainage districts.

Financing Drainage Operations as Viewed by a Banker.

In his "Suggestions Concerning Financing Drainage Work in Florida," W. E. Fulcher, of A. B. Leach & Co., New York, outlined some existing drainage laws and gave reasons why it was difficult, under present conditions, to finance many reclamation projects in Florida.

One of the laws criticised is Title 9, Chapter 16, Florida Compiled Laws of 1914, which also contains the amendment of 1913 (Chapter 6457) and the amendment of 1915 (Section 6958). Under this law county commissioners are authorized to form drainage districts on petition. Special assessments are made in accordance with benefits determined by a committee and later confirmed by the county board. No provision is made for appeal from the county board's decision. Drainage bonds, bearing not more than 6 per cent., are issued by the county board for the amount of the assessments, and the act makes the assessments unattackable three months after their confirmation by the county board. Bonds are to be serial, but the minimum and maximum limits are not fixed.

The property-owner may pay his assessments at any time, and they are declared to be a lien superior to all others except taxes.

Mr. Fulcher stated that the act seems reasonably fair, but a little study shows some bad features. For instance, he said that it was absolutely necessary that the district reserve the option to pay the bonds before maturity at any time. Otherwise since the property-owner has already been given power to pay his assessments when he pleases and thereby stop interest, there is likely to be an insufficiency of the fund, for the bonds will continue to draw interest unless the board has the right to redeem them whenever it has funds to pay. In subordinating the assessment lien to taxes, the drainage bondholder is compelled to take a back seat. Not only is his security poor, but the difficulties of collection by tax sale are greatly increased and sale to tax buyers is practically killed. Many States place assessment liens on a par with State and county taxes, and so they should be.

The provision that the assessments shall be beyond attack three months after they are made compels the bondholder to take his chances on the validity of the assessment.

Chapter 6458, Laws of 1913, stands out in sharp contrast. It is a broad and comprehensive act, and misses some of the defects discussed. Under it drainage districts are created by the State Board of Drainage Commissioners on petition. Benefits are determined by the Circuit Court and the so-called taxes to be levied annually thereafter must fall within these benefits unless by a later proceeding benefits are adjudged to be greater than at first. Bonds are to be issued up to 90 per cent. of the amount of the benefits, bearing not more than 6 per cent. interest, maturing serially up to 30 years, the first maturity not more than 10 years from date. It also provides for foreclosure of tax liens by a civil proceeding similar to that of mortgage foreclosure.

If the district officials fail to act in enforcing the act any bondholder may act. One very questionable feature is the provision that if lands are not sold for sufficient to pay the taxes in arrears they shall be knocked down to the drainage board, which may thereafter sell them as it deems the interests of the district require. It is quite striking that the framers of this carefully-drawn act considered the interests of the district at this juncture and failed to consider the interests of the bondholders. The act, like the first one mentioned, is subject to criticism in making the lien subordinate to the lien for a general State, county, school and road tax, as well as making it inferior to the drainage tax of any district already created in the same territory. This pyramiding of taxes is not helpful to the bondholder unless he can be assured that his lien is at the top. It is noticed that neither of these acts limits the amount of bonds except in relation to the amount of the assessments. They in turn are limited by benefits. One good feature is that both the acts provide for maintenance, and if this is valid it adds much to the security of the bondholders, because a drainage bond is worth little if there is no provision for maintenance of ditches.

Some of the important features of well-devised legislation for drainage financing, as outlined by Mr. Fulcher, include:

"1. The bonds should not run beyond the reasonable life of the ditches, and their payment should be in serial instalments beginning within a reasonable period. Both the acts mentioned permit this, but it is a little doubtful whether a drainage bond should run 30 years.

"2. Provision for maintenance is essential to the security of bonds issued for ditches.

"3. The assessments must be based on benefits, and means should be provided for determining the legality of the assessments in the courts before bonds are issued.

"4. Drainage taxes being far greater than ordinary municipal and State taxes, it is necessary to provide a different means of collection. Ordinary tax sale laws rarely suffice for the collection of large amounts, and so throughout the country we find that special assessment laws generally make provision for enforcing the lien by a civil action. Another method is to use the tax machinery and sell the land in somewhat the same way as land is sold for regular taxes."

The Almost Limitless Possibilities for Cattle Raising in Florida.

In his paper on "Forage Plants on Florida Drained Soils," Prof. R. E. Rose, State chemist of Florida, gave much valuable data regarding a few of the most common and abundant pasture and hay grasses adapted to and now growing in Florida, particularly on drained or partly drained prairies and marshes of the State. He said that to those familiar with the low lands of the St. Johns, the Kissimmee, the Peace River and other river valleys, to say nothing of the vast area known as the Everglades, with its surrounding territory of saw grass and Maiden cane ponds and marshes, it is needless to say that the Maiden cane is the native cane par excellence for the drained muck lands of this and other Gulf States. Its value has long been known to the Florida and Louisiana stock man.

As the grass is a native and grows naturally on the low, partially submerged meadows of the State, and with much greater luxuriance on drained muck and prairie soils, it is one of the most valuable pasture grasses of the State, particularly on account of its protein content, which is comparable to many legumes. This grass also grows on high sandy soils.

Next in order of value, some growers say, is the Bermuda grass, which is the equal of Bluegrass as a pasture, particularly for dairy cattle, as are its first cousins, the St. Lucie grass and joint grass of the St. Johns and other prairies of the State.

Another grass common to Florida prairies is locally known as "Switch grass." It grows luxuriantly and has long been known as an excellent pasture grass, particularly in the early spring. It is relished by cattle of all ages.

Still another grass that will probably yield a larger tonnage of forage of excellent fattening quality is the Japanese cane. This grass was introduced into Florida by Mr. Rose many years ago. It will grow on any land in Florida that will produce corn. It is a perennial, ratoons each year in the northern counties from the stubble of roots, and in South Florida it is seldom winter-killed and affords first-class winter as well as summer pasture. Thirty tons of fresh cane is not unusual

on ordinary soil, while on well-drained muck soils larger tonages are frequently made.

Of the recently-introduced grasses, probably Para grass is one of the best pasture grasses. It has spread rapidly on the edges of the 'Glades and on the partly-drained lands of the Kissimmee and St. Johns valleys, and other sections of the State. It is a most excellent pasture and makes excellent hay.

Rhodes grass, which was introduced into Florida but a few years ago, is now growing in considerable area on reclaimed marl prairies, particularly on the upper St. Johns prairie at Fellsmere, where a meadow of some 40 acres has made as many as five cuttings per annum, yielding one and a half tons to each cutting. It has also been introduced on the West Coast with equal results. One authority says of it that it has fine promise of becoming the competitor of the timothy of the North.

Natal grass, which was introduced into Florida about 1880, has become well established on the higher lands of the central peninsular, particularly in Lake county, where it is growing in large quantities. It is the equal of timothy in feeding value. It has not been grown on low lands, though on well-drained low lands it should be successfully produced. All livestock relish it both as pasture grass and as hay, which is as readily cured as timothy, and it has been known to yield three cuttings of hay, averaging two tons per acre per annum.

Among the legumes that grow in abundance in Florida is the well-known cowpea. It grows on all soils in the cotton belt, and makes a hay similar to clover; being a legume, it enriches the soil and builds up its fertility.

The velvet bean is the most generally planted legume in South Florida. It produces an immense crop of cattle and hog feed. The general practice is to use it as a winter pasture, self-cured after frost, the vines, leaves and beans being harvested by the livestock. It is of especial value in building up the soil.

Another valuable legume which is found in all parts of the State is known as the "Beggar weed" or Florida clover. When once established it will continue for years to re-establish itself. As a hay crop it succeeds best on land containing a considerable amount of moisture. On high, dry land it may also be grown, but the yield is not so heavy as on the lower lands, and it will continue to reseed itself unless destroyed by cultivation or close cutting, whereby seed development is prevented. Beggar weed fits well into the rotation with farm crops. This legume is largely used as a cover crop in orange groves, etc. It adds an immense amount of humus and the consequent nitrogen necessary to the orange grove, thus greatly economizing in the cost of fertilizing. It analyzes as follows: Protein, 21.70 per cent.; starch and sugar (nitrogen-free extract), 30.20 per cent., and fat 2.30 per cent., thus producing what is said to be the greatest food value of any leguminous hay known. Mr. Rose stated that the first analysis of Beggar weed was so high that it took several experiments to convince the chemist that their first figures were correct and that it really possessed highest food values. Livestock of all kinds are exceedingly fond of Beggar weed, both green and as hay, preferring it to any other forage feed.

A recently introduced legume is known as the Japanese kudzu, a perennial legume, which promises to become of value. It grows luxuriantly and produces large crops of forage and hay, and can be cut at any season. Fields of it are known to have entirely covered the ground, destroying all other grass or weeds, from which three and sometimes four cuttings of excellent hay have been taken in one season. The hay is similar to cowpeas or velvet bean hay.

The foregoing, said Mr. Rose, are but a few of the native and imported grasses grown in Florida, firmly established and well known to most of the stockmen. There are many others. Lespedeza, burr and crimson clover, etc., are becoming naturalized in the State. In conclusion Mr. Rose said:

"It is not necessary to say that rice on our low lands is one of the best grain and hay crops, while 'crab grass' follows each crop of corn and makes a hay in every respect equal to timothy, if cut at the proper season and well cured.

"With this list of grasses and legumes, no State in the Union should have better pastures and meadows. What with her superb climate, abundant sunshine, well-watered soil, with lakes and rivers, with a 60-inch rainfall well distributed, with but a practically no winter in the southern part of the few weeks winter in the northern counties, and

State, where pastures are practically perennial, the time is but short when Florida will become one of the greatest livestock States in the Union. When her vast areas of wet lands, her prairies and marshes, her low hammocks and jungles are drained, her greatest wealth will be in her livestock, while her farms and fields, her groves and truck farms, will increase in fertility and productiveness in direct proportion to the increase of her dairy and livestock industries.

"When the manure pile and compost heap replace the commercial fertilizer bag and the fertility and productiveness of her soil are enriched by the cow, the sheep and the hog, grown on her meadows and pastures, returning to the soil the much-needed humus, enriched by the nitrogen from the atmosphere, secured by her legumes—the most practical and economical means of fertilizing her farms—Florida will become the leading livestock producer, with the most productive farms, producing staple crops of corn, tobacco, rice and sugar, to say nothing of winter vegetables and citrus fruits."

ROBERTS TO HAVE CHARGE OF SPARROWS POINT IMPROVEMENTS.

Representative of Schwab's Remarkable Organization of Vigorous Young Men.

It has been announced by the Bethlehem Steel Corporation that W. Frank Roberts has been made a vice-president of the corporation and will be operating official in direct charge of steel plants and will have under special charge the improvements to be made at the recently-acquired plants of the Pennsylvania and Maryland Steel companies.

Mr. Roberts is one of the group of men characterized by Charles M. Schwab as his "fourteen boys," who have made possible the wonderful growth and development of Bethlehem steel.

A graduate of Lehigh University, Mr. Roberts started work in the boiler-houses of the Bethlehem Steel plant, and it was there he was "found" by Mr. Schwab. His ready grasp of the details of steel manufacture, as well as his unusual executive ability, won him rapid promotion, and for the last two years he has been general superintendent of the Bethlehem Steel plant, with 20,000 men under his charge.

Although but 33 years of age, his rapid rise has been due to unusual ability displayed in handling the problems entrusted to him, and in becoming vice-president in charge of steel operation for the Bethlehem Steel Corporation his activities will be tremendously broadened and he will have direct charge of expending \$15,000,000 to \$20,000,000 in the vast improvements to be made at the plant of the Maryland Steel Co. at Sparrows Point, and likewise enormous expenditures in improving the plants of the Pennsylvania Steel Co. at Steelton.

\$600,000 Coal Mining Company.

Coal land development is the purpose of the Hazard Coal Corporation, Roanoke, Va., incorporated with \$600,000 capital. Officers have been announced as follows: W. J. Brown, president, Bristol, Va.-Tenn.; J. B. Fishburne, vice-president; D. D. Hull, Jr., treasurer; Leon Neal, secretary; each of Roanoke.

\$500,000 Hay Compressing Company.

Several \$20,000 plants for compressing hay are to be located in Southern seaport cities by the McDonough Compress Co., organized in Atlanta, Ga., with a capital of \$500,000. Each plant is to have a daily capacity of 250 tons, and the machinery (now being constructed) for the initial installation will be mainly steam compresses and boilers. The company's officers are as follows: J. H. McDonough, president, Dallas, Tex.; W. H. Kemp, vice-president; N. B. Henry, secretary, each of Atlanta.

Edgar Van Slyke and associates, Gainesville, Tex., are reported to build woolen mill costing from \$15,000 to \$20,000. Their plan includes utilizing wool grown in Cooke county.

Staunton Business League Report.

A well-distributed growth of industry is reported by the Staunton (Va.) Business League, made recently at the annual meeting. Not only the steel-producing and munition-making plants are growing, but the smaller manufacturing and agricultural centers have recovered from any depression that might have been felt during the earlier stages of the war, according to the report. Good prices for the wheat and apples, two of Staunton's leading crops, and new investments in local enterprises have restored confidence, causing the business interests of that section to look for a very prosperous spring and summer season.

The report attributes to the league credit for instrumentality in increasing the payroll of the local manufacturing plants 20 per cent. during the past year. Chief among the results of the Business League is cold-storage plant for apples with capacity of 40,000 barrels. In this connection the league calls attention to the opportunity for the location of a large evaporating plant, as fruit can be bought and labor obtained cheap. The Staunton Brick Co., capacity 25,000 bricks per day, is now under course of construction and is expected to be in operation the latter part of March.

Tannic Acid Extract Plant.

Swift & Co. of Chicago will build a tannic acid extract plant at St. Paul, Va., and contract for erecting the buildings (to cost \$40,000) has been awarded to J. A. Jones of Charlotte, N. C. Part mill and part reinforced concrete construction has been selected, with asbestos protective metal roof, the buildings to include 180x48, 125x56 and 48x48-foot structures, with office and pump-house. Reinforced steel has been purchased from the Concrete Steel Co. of Chicago, and asbestos protective metal from the Pittsburgh Asbestos Protected Metal Co. of Pittsburgh.

Developing Navel Type of Grapefruit in Florida.

George W. Meares, Pinellas county, Florida, has produced a navel type of grapefruit. It is described as of good size and color and of fine flavor. Mr. Meares is said to be one of the oldest, most capable and experienced citrus fruit growers in Florida, having been engaged in raising citrus fruit on a large scale since 1861. He proposes to adopt all the best-known methods to reproduce the navel grapefruit, and feels quite certain that he will be able to establish it as a distinct type and to produce it on a commercial scale.

\$600,000 Fertilizer Manufacturing Company.

Phosphate fertilizer will be manufactured by the National Phosphate Fertilizer Co. of Nashville, Tenn., which has been incorporated by John H. Clagett, H. H. Huddleston, A. C. Grigsby and others. This new corporation is capitalized at \$600,000.

Wood-Brick Veneer Factory Planned.

A \$500,000 company has been incorporated to manufacture wood-brick veneer at Aycock, Fla. Its incorporators are T. J. Aycock of Aycock, A. A. Myers, Jr., of Chipley, Fla., and W. E. Aycock of Moultrie, Ga.

India Firm Wants Yarns.

Kinarivala Bros. & Co., Ahmedabad, India: "Insert the following inquiry in your widely-distributed paper: Wanted lowest prices, with samples and guaranteed test, for 2-40s white and turkey red dyed American and Egyptian yarn for c. i. f. Bombay or f. o. b. American port delivery. Terms cash. Better cable prices and tests to Kinarivala Bros. & Co., Sakar Bazar, Kalupur, Ahmedabad, India; if not, write us by the post, 'T. A. 66 Kinarivala.'"

About \$10,000 (not \$100,000, as lately stated by error) will be the cost of the additional buildings of the Linn Mills Co., Landis, N. C. Plans provide for 100x100 and 100x42-foot brick additions, 3876 spindles, electric-power drive, etc.

A Few Reflections on the Conditions of the Iron and Steel Industry Affecting, Not Alone the United States, But the Peoples of the World

[An unsigned and undated leaflet with the above heading reaches us through the mail. Anonymous pamphlets or articles are not generally given much credence, and though this leaflet was evidently written by someone interested in iron and steel, some of the views expressed are sufficiently interesting to justify the publication of the following extracts from it.—Editor Manufacturers Record.]

Since the commencement of hostilities in Europe, involving the nations of the world most prominent in the production of iron and its products, the writer has been impressed with the belief that a continuance of hostilities for a year or more was destined to work great changes in the iron and steel industry, both as to distribution and price. He early became convinced that the depression in the iron industry in America was terminated and there was destined to come an enormous enhancement in value. The experience of more than 40 years in business life has afforded some opportunity for studying social, political and industrial economics covering not alone conditions in the United States, but those obtaining in the world's trade generally. He claims no prescience or superior judgment, but, on the contrary, has a strong realization of his own fallibility. He has retired from active affairs, and has thus during the last five or six years, been afforded, as one of life's compensations, ample opportunity for investigation and reflection.

The first fact which merits careful attention is the enormous daily destruction of iron. When a railroad company has purchased steel rails, and the rails through attrition have lost from 10 to 20 per cent. in weight, the rails go again to the furnaces and are fashioned into some other form of usefulness. When a plow point has lost 10 or 15 per cent. of its weight it will again go to the smelter and be reconverted to useful purposes for mankind. For the last 16 months or more we have been annihilating metal at a tremendous rate. When a shrapnel shell explodes the metal contained in it is practically lost forever for the use of mankind. When a solid shot has buried itself in the earth or in the sea it is forever lost. When the wire entanglements used both in the sea and on land have by contact with the earth or by the action of the salt water lost wholly or in great measure their usefulness, but little of the wire entanglements will return to the smelter. When we recognize that substantially 60 per cent. of the gross tonnage of all shipping is of iron and steel, and that the list of the sunken vessels of the warring powers is daily growing we can commence to realize something of the extent of the annihilation of this metal. When a vessel of 10,000 tons is sunk, she has carried down with her 6000 tons of iron. When some of the leviathans have been sunk, they have carried down 30,000 tons or more of metal. In 10 days' time 5,700,000 shells have been fired by the French on their offensive lines. These shells will range in weight from 40 pounds to 2600 pounds. Taking the Allied and the Central Powers, it is a safe estimate that each day from the commencement of hostilities, at least 25,000 tons of iron have been absolutely destroyed and taken forever from the use of mankind. This means we must go back to the mines and produce new metal to replace the store that was in the world at the outbreak of hostilities. In other words, after the war has ended, we must produce as much metal as we produced before, plus the amount which has been annihilated. This destruction approximates more than three-quarters of a million tons for each month that the war continues, and this annihilation of metal will be felt prejudicially by the consuming public for long years after the war has closed.

During the progress of the war the productive territory and productive capacity of iron which France, Belgium and Luxemburg had enjoyed heretofore have been in the hands of the Germans. The annual productive capacity of the world is approximately 75,000,000 tons. Between 50 and 60 per cent. of that capacity is located in the territory of the warring powers. England has placed an embargo on the shipment of iron. Practically every metal industry in England is employed in the manufacture of the munitions of war. The same is true to a greater degree in Germany. Her productive capacity in the metals is devoted almost entirely, if not exclusively in this direction. Belgium, which has been a hive of manufacturing industry, dealing largely with the more finished products of metal, is a toru and devastated nation and cannot for a great

many years expect to regain her former prominence in the industrial arts. Especially is this true as relates to metal. Liege, which is known as the little Pittsburgh of Belgium, is in ruins. For economy, if for no other reason, when Belgium is rebuilt, iron and concrete, even at the increased cost of iron, will play a more prominent part in her building operations than before. In the days of cheap labor she could quarry and dress stone for her structures; now she must rebuild on the more utilitarian and economic basis that prevails in the world generally. During the 16 months that this war has continued, Eastern Germany and Austria have been ravished by the inroads of the Russians, and these countries, in turn, have ravished Russia, Belgium, Poland, Serbia and France. When the treaty of peace shall have been signed practically every mile of railway track in Germany and Austria will have to be relaid—her bridges rebuilt—especially on the eastern frontiers. These bridges are many of them over great rivers. It is doubtful whether Germany has built, except for military purposes, a car or locomotive since the commencement of the war. It is doubtful whether any European nation has built a car or locomotive. Great Britain must relay and re-equip her entire railway system. Her merchant marine must be rebuilt and re-established. The productive capacity of the British ironmasters will be taxed to the limit and every pound of metal that either Germany or England can produce will be required within its own territory for the supply of its transportation systems and its industrial arts. Germany, for three years after the war has terminated, will find its productive capacity inadequate to meet the demands of the people of that country and of Austria, its neighbor.

Russia, Italy, France, the Mediterranean States, China, Japan, India, the East Indies, Australia and South America, whose markets were largely, if not altogether, supplied by Germany and England, must turn to the United States for their supply. The shelves of the world are nearly bare of hardware, and the world's warehouses empty. The United States during 1914 and the first half of 1915 was producing but a little in excess of one-half the total normal annual requirements of our own people. We had been suffering from an industrial depression with a correspondingly low rate of production in practically all our industries, and especially so in the metal industry. In other words, the United States as a whole, at the beginning of the war, had no accumulated store of metal in stock because of the great industrial depression in this country. The great transportation companies had been out of the market for the last two or three years. They had been buying from hand to mouth, and used no new metal except under the most urgent necessity; therefore six months after the declaration of hostilities in Europe the United States was in arrears for at least 25,000,000 tons of iron and its products. The United States has never enjoyed a very large export trade for its products of iron. We sometimes sold abroad our surplusage at a price somewhat below the prevailing figure, in order that our furnaces and rolling mills might not be completely closed, but England and Germany supplied their own needs and very largely the needs of the outside world. Of our total production of metal, the United States consumed approximately 90 per cent. China, Japan, South America, Australia and the various other peoples who make up the population of the globe have been waiting for the end of the present war to replenish their depleted stocks, but this waiting has now been prolonged for 16 months and the shelves and warehouses of the world are nearly empty, and already these nations are turning to the United States as the one source of supply. This demand is not insistent at the present time, but soon must be so.

These various peoples did not deal on the dollar basis. Their exchanges were drawn on London, Berlin or Paris. The American citizen doing business with the nations of the world, even with our South American neighbors, found it more convenient and expeditious to

visit South America via England, and his bills of exchange, what few there were, came through European financial marts. Therefore these nations because of the war have put off making any replenishments in their store of metal until, as stated, their supplies are practically exhausted. The United States has never made a determined effort for commercial conquest, nor have we ever been financially in position to do so until the present time, but a world-wide commercial transformation has commenced, and the seat of financial empire, which in turn has been at Rome, Constantinople, Venice, Hamburg and London, is now in all human probability established with a promise of permanence in New York. From present indications it seems doubtful that there will be any armistice or cessation of hostilities before November, 1916, if so soon.

When the war does end it will not be from lack of hatred and desire to fight; it will not be altogether from exhaustion of material resources, but principally from absolute exhaustion of financial resources. Whether the war is prolonged or, by the grace of God, speedily terminated, as is to be sincerely hoped, it is apparent that each month of prolongation affords greater certainty and assurance that the demand upon the resources of the United States will be correspondingly larger and more urgent. Let us look for a moment at the conditions that will prevail in England and Germany when the war is over. Germany has developed her metal industry by leaps and bounds. She has practically run away from England and the United States in increasing her foreign commerce. Science and industry have been joined in Germany as in no other land. The German Government has looked upon combinations of capital, not with suspicion, but with approbation. She has not laid threats upon the producers of wealth, but has encouraged development in all the industrial arts. She has tried to promote great enterprises for the accomplishment of great purposes in trade and finance. She has recognized that they made for stability, for power, for national wealth and prosperity, and that while there were some who benefited to a greater degree than others, yet the people of Germany as a whole were benefited, and that combinations of capital and co-ordination of forces were for the good of her people and came as a blessing rather than a curse. * * * Years must elapse before the surviving soldiers can be organized to the same degree of efficiency which had formerly made Germany the foremost competitor among the nations of the world.

Germany and England divided the world's commerce and supplied the world's needs in the metal industry, not only because they were efficient, not only because a lower rate of wage prevailed than in the United States, but also because of the cheaper money available for her manufacturers and merchants. They could sell a bill of hardware to China, Japan, Australia or South America and take in payment notes bearing 6 per cent. 7 per cent. or 8 per cent. interest and running for 6, 12, 18 or 24 months, and go to their bankers in Berlin or London and discount those notes at the rate of 2½ per cent. to 3½ per cent., this operating all the time as a bonus of 3 per cent. or 4 per cent. in favor of the British and the German manufacturer and distributor. The American manufacturer who was paying 5 per cent. or 6 per cent. for money could not afford to sell or compete for trade on long-deferred payments, for it was of no advantage to him, though of great advantage to his competitor so to do. When the war ceases and the German and the British manufacturer seeks to reopen his workshop and set the wheels of industry and commerce in motion, he must go to his banker. If reports are true, that in making her internal loans, Germany has arbitrarily compelled each bank depositor to accept for a certain proportion of his deposits a Government bond, this state of affairs, upon the resumption of business, will require a larger supply from the bank to the manufacturer. When the business man makes his application for loans, instead of being accommodated at from 2½ per cent. to 3 per cent., as heretofore, he will be com-

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pelled to pay not less than 6 per cent. and probably 7 per cent. for his money. The merchant and the manufacturer will be informed that the Government is paying 6 per cent. for money, and that banks can place with the Government all their loanable funds. It is a fair presumption that in those countries, as in this and in others, the Government can borrow from the banks more cheaply by some considerable margin than the individual. This increase in interest rate will act in the nature of an embargo on exportations. The cheaper money rate prevailing in the United States than in Germany, England, Belgium and France, will afford to the American manufacturer and distributor a bonus equivalent to the rate that he will have to pay in the bank and the rate borne by the note that he receives from his customer. Through our reserve banking system, money for commercial transactions is accessible as never heretofore for the merchant and manufacturer and at a much lower average rate. We are fast becoming the world's creditor. American securities formerly held to the extent of billions of dollars in foreign lands have very largely returned to our shores, and the interest upon those securities will be paid in the future to the citizens of the United States, rather than to those of foreign nations.

Another factor which must not be overlooked is the increase in wages on the other side of the water. The wage cost of coal production in Great Britain has increased something like 40 per cent., and the wage increase generally has been from 20 per cent. to 30 per cent. While these conditions do not prevail to the same extent in Germany, yet, according to the best obtainable information, there has been there a marked increase in wages, which, however, through the direct and arbitrary influence of the Government, has been less pronounced. When the warring nations are again blessed with peace any attempt to reduce wages will meet with resistance. It is a comparatively easy matter to increase wages, but a very difficult matter, involving strikes and lockouts, when any reduction is attempted. Therefore this increase in wage rate among the warring powers, whatever it may be, whether 10 per cent., 20 per cent. or 30 per cent., operates directly as an export tax upon their shipments and as a direct increase of our protective tariff against all shipments to this country. England must have ship plates and shapes far beyond her own productive capacity for the rehabilitation of her merchant marine. All the warring nations will for a time after the cessation of hostilities, be joined with every other nation in the world in demanding some considerable portion of our products.

* * * Following the law of supply and demand, iron and its products will increase in price and within three years from today the present price of iron products will seem extremely cheap. The average price advance in finished products during 1915 has been something like \$11 a ton, and this advance has been mainly made in the last 60 days. Heretofore we have consumed something like 90 per cent. of our own production. During the next few years we must be prepared in the United States to meet a demand far greater from the outside world than from our own people. Therefore it is incumbent upon the American steel-makers to enlarge their capacity and to double their production at the mines, to multiply their smelters and their mills, for it will be nation bidding against nation for our production. As in olden times other peoples came to Egypt for corn, so the world within three years will be knocking at our doors for their distributive portion of the products of our furnaces and forges. Anyone who has studied price movements since 1870 has seen different epochs in which the products of iron have more than doubled in price within 18 months. It seems a conservative opinion that iron and its products will nearly if not altogether double in price within the next three years. When the writer expresses his opinion that the price will reach \$50 or \$60 a ton he recognizes that he is in the realm of prophecy, but he believes he is not outside, but well within the realm of possibility or even probability. * * * The world must come to the United States for its supply of iron and steel, and that nationally we are entering upon an epoch of prosperity such as has rarely if ever been enjoyed by any people.

* * * For the next three years, at least, the United States must supply not only our own needs, but also the needs of all the world. From the most reliable information obtainable and the most careful analysis, it is undoubtedly true that there exists today a world

shortage in iron products exceeding 70,000,000 tons. To meet the current demands of the world in products of iron, and supply the existing deficit will emphasize the force of the maritime maxim, "A stern chase is a long chase." The United States Steel Corporation is wisely expending \$10,000,000 in increasing its capacity, and would act with greater wisdom by the expenditure of \$100,000,000. Maurice Damour, chairman of the French Commercial and Industrial Commission, who reached our shores in November, 1915, is credited with the statement that France will need \$1,000,000,000 worth of our products the first year after the close of the war. The writer cannot certify to the correctness of this statement, but if it is 20 per cent. correct it would make all the writer's predictions far too conservative.

The situation of affairs must be considered from the world standpoint and not from the Wall street angle of vision. Steel is very cheap at present prices. The better class of railway shares are selling at extremely low prices and standard oil stocks generally are selling very far below their real value. As a nation we have entered upon an epoch of such prosperity as has never been seen by the present generation. Political blunders of the past, the present and the future may harass and hinder, but cannot permanently destroy the spirit of the American people. The common sense of the nation is becoming awakened to the outrage of having

business conducted by lawsuits and directed by demagogic politicians. The common sense of the people permits a tolerably clear vision of the fact that prosecution of business has in many instances degenerated into persecution and is stimulated and carried on by and for the benefit of a hungry horde of lawyers with a "political pull." We shall march farther forward in all the industrial arts in the next decade than we have ever gone before in a single generation.

The skeptical are invited to reflect and reason on the outstanding fact that England, Germany and Austria will necessarily in the two years immediately succeeding the war import more steel than they export. The United States must therefore prepare to supply the demands of the world whose stocks of iron and steel are depleted through 16 months or more of use and sale without the purchase of one pound of industrial supply during that period. At the same time the United States must produce at least 30,000,000 tons for home consumption. If the writer were the individual owner of a steel plant, and guided only by business instinct, he would store production and borrow money on warehouse receipts. "Iron is either a prince or a pauper." Cotton and corn may both claim kingly lineage, but iron will soon be recognized as at least a prince of the blood and heir apparent to the throne.

An English View of Iron and Steel Throughout the World After the War

The outlook for world competition in iron and steel, as viewed in England, is presented in a letter from Sheffield to the New York Journal of Commerce, from which the following extracts are taken:

In terms of pig-iron our British capacity may be put, in round figures, at 10,000,000 tons a year. Germany's capacity is about 20,000,000 tons, though it may be diminished at the end of the war by the loss of Lorraine, or it may not. The capacity of the United States is fully 35,000,000 tons, and is being increased. We understand that when extensions now under way or projected are complete your capacity will approach the 40,000,000-ton level, with a corresponding steel works capacity. Now we observe that apart from the abnormal conditions which have come temporarily into existence through the war, your United States home demands do not require, on an average, much more than 20,000,000 tons of pig-iron or steel ingots annually. Making every possible allowance for the growth of consumption in your country, we cannot see that you will need more than about 25,000,000 tons of steel a year in the near future. That will leave a huge margin for export in competition with ourselves and other countries. Averaged over the period since the financial panic of October, 1907, America, with something like a 30,000,000-ton steel capacity, has not consumed more than about 20,000,000 tons a year, and exported about 2,000,000 tons, against our British exports of between 4,000,000 and 5,000,000 tons, and Germany's exports of between 5,000,000 and 6,000,000 tons.

We have observed that in your country first the Steel Trust and then the "independents," next the "independents" and then the Steel Trust again, have built mammoth furnaces and steel mills, pushing your aggregate productive capacity many millions of tons beyond your consumptive requirements. And we have seen the remarkable spectacle of 30 or 40 per cent. of that huge capacity standing idle for the greater part of seven years, while ourselves and the Germans, between us, have divided five-sixths of the world's export trade in iron and steel. While you increased your capacity sufficiently to have enabled you to take about nine-tenths of the world's trade in exports, and to have pushed us and other competitors quite out of the race, it so happened that your costs of production advanced to such an extent that, save in a few specialties, you were unable to offer any serious competition in neutral markets except those on your own borders. Taking the investigations of your Industrial Commissioners in the nineties, and of your Ways and Means Committee and internal taxation authorities for more recent years, it appears that in the interval, say, between 1898-1909 and 1908-1909, the cost of producing iron and steel in

the United States increased by nearly 40 per cent. And it does not appear that you have been able to reduce your costs since the Ways and Means Committee made their special report, based, I believe, upon the conditions of 1908. In recent years your iron ore has steadily got leaner, yielding less metal. This not only means that you have to use more coal or coke and more lime to produce a ton of pig, but your mining is much more costly owing to the exhaustion of your top seams. Your mining royalties and taxes are much higher. Your transit costs have also gone up owing to dearer fuel and labor. For example, some 15 years ago your iron ore was carried from Lake Superior mines to Pittsburgh furnaces for at least half a dollar a ton less than the cost today. The net result of your advanced costs has been to put you almost out of the running with British and European steelmakers in neutral markets.

Now what of the future? Is German competition going to be seriously weakened by the war? Are our British costs of production, enhanced by the war, going to remain so high afterward that America will become the world's greatest exporter of iron and steel? You have the capacity for the trade. The only question is that of selling prices, which depends, of course, on the question of costs of production.

At the present moment the situation in America appears to us to be this: With Britain and Germany, together with Belgium, France, Russia and Austria, practically out of the race, America is enjoying a great industrial boom. Exports are at record high levels, with big bookings ahead. With the farmers and other producers receiving war-time prices, the railroads receiving abnormal revenues, and shipbuilding under pressure, you seem to be indulging deeply in speculation. Your mines, iron and steel works are working at full capacity. But the war will end. Then will come keen competition and it will be the country that can produce the cheapest that will get the most trade.

Generally speaking, it may be said that we feel ourselves able to hold our own with American steelmakers in most neutral markets. We possess certain natural, geographical and economic advantages over the United States. We have our domestic iron ore and coal deposited practically side by side, whereas in your country they lie about 1000 miles apart. Again, in the matter of foreign supplies of ore (we import one-third of what we consume) we can have these, in ordinary times, fetched from Spain and Scandinavia and landed right alongside our blast furnaces, and close by our coal pits, at a freightage which is little more than half as much as your cost of carrying your own ore from mines to smelters. Similarly with regard to shipping finished products, most of our big works are close to our docks,

and none of them much more than 100 miles from seaboard, whereas your works are mostly between 400 and 500 miles from a port. Thus we may claim that we have our mines, our furnaces, our mills and our shipping ports all within a very small compass, whereas in your country they are separated by enormous distances. These conditions give us a big natural advantage over you. Again, we are considerably nearer to most of the world's neutral markets than you are. And yet again, our wages are little more than half as high as yours, and our processes of manufacture and methods of management have been so considerably improved these late years that they are not nearly so inferior to yours as they were when, some 15 years ago, Mr. Carnegie was able to declare that the cheapest steel in the world was produced in the United States, and when another of your great men asserted that in this line you could "lick creation."

Nevertheless, we are not unmindful of the burden of taxation we shall have to carry, nor of the demands our trades-unionists are disposed to make and the restrictions they impose—conditions calculated to increase our costs of production. Neither do we underrate the possibility that with a great promised development of your shipping, especially via the Panama Canal—assuming that your great new waterway proves safe—your people may be able to get most of the business in Central and Southern American markets. The probability seems to be that there will be a weakening of the competitive powers of Germany, Belgium and France by the war, and some increase in our cost of production, but whether this will bring our export quotations nearly up to, or level with, or beyond yours is at present problematical. The certainty is that the world will, soon after the war, call for enormous quantities of steel products, and it is little less than certain that the trade race will be mainly between Britain and America, as in the past it has been between Britain and Germany.

ADDITIONS TO ATLANTIC STEEL CO.'S PLANT.

Running to Capacity in all Departments— Contemplated Improvements to Cost \$100,000.

New York, March 7.—[Special].—The board of directors of the Atlantic Steel Co. of Atlanta, Ga., has voted to expend \$100,000 this year for additions to its plant. Work will be started at once, it is said, and the additions mapped out will be completed as early in the current year as possible.

The entire improvements, worked out so as to increase the productive capacity in its several units, will all be paid for out of earnings.

The board of directors has also voted to buy in \$100,000 of outstanding bonds for sinking fund purposes.

These, too, will be paid for out of earnings. A member of the board states that while plans for the complete improvements may not yet be fully rounded out, the necessity for enlarging production to meet the ever-increasing demand is daily becoming more urgent.

New orders have just been received by the company which are so large that their filling will require the working of the various departments of the company at maximum throughout the entire year of 1916 and probably into the first quarter of 1917.

These orders are said to have come from the firm of J. P. Morgan & Co., through the foreign order department, and presumably the bulk of the product they call for will be ultimately shipped to the Allies. Official information on this point is refused, but it is said that the company could have booked orders for barbed wire to more than ten times its capacity.

The armies of the Allies are using countless tons of barbed wire in the trench entanglements along the 500 miles of fortifications on the Western battle lines and all barbed-wire producers in the United States are booked to capacity.

The Atlantic Steel Co. was organized in 1901 with a capital of \$750,000 common and \$200,000 preferred stock. Its plant has an annual capacity of 45,000 tons ingots; 40,000 tons billets; 30,000 tons wire rods; 20,000 tons of rails, cotton ties, etc.; 150,000 kegs wire nails; 100,000 kegs railroad spikes; 10,000 tons of wire; 6000 tons of barbed and galvanized wire.

Cost of Government-Built Battleships

ALL THE FACTS SHOULD BE IN POSSESSION OF CONGRESS AND THE PUBLIC.

[Special Correspondence Manufacturers Record.]

Washington, D. C., March 4.

The recent editorial statement of the position of the MANUFACTURERS RECORD, namely, that it is in favor of Government shipbuilding or armor-plate manufacturing to the extent of covering a part of the Government's needs, but that the actual cost of such ventures should be clearly explained to the public, has met with wide approval among the members of Congress.

There is a growing realization that while the Government may do considerable of its own shipbuilding, nevertheless, if such ventures are costly there should be no concealment of the facts. Representative William A. Jones of Virginia called attention to the facts submitted to Congress in his recent address on the subject of Government battleship building. The facts which Mr. Jones had collected and which have not received the notice to which they are entitled indicate that navy-yard-built ships cost very much more than ships built by private contract, which has been very completely demonstrated by an experience extending over a period of many years at the two large Government navy-yards best fitted for efficient and economical construction.

"To substantiate this," said he, I refer to the statement of Admiral Watt, Chief Constructor of the United States Navy. This statement is set forth in the Congressional Record of February 26, 1913, at page 4131, and is as follows:

Navy-yard built.	Cost about	More than
Connecticut . . .	\$374,000	Louisiana, a sister vessel built by contract.
Florida	2,289,000	Utah, a sister vessel built by contract.
Jupiter	590,000	Cyclops, a sister vessel built by contract.
New York	1,463,000	Texas, a sister vessel building by contract.
Cincinnati	770,000	Formal proposals received for their construction.
Raleigh	714,000	Limit of cost inside which it is estimated that vessels could have been contracted for.
Maine	780,000	The average of informal estimates received from three ship-building companies. (See p. 359, Secretary of the Navy's hearing, January 12, 1911.)
Texas	449,000	
Vestal	250,000	
Prometheus . . .	140,000	
Total	\$7,790,000	

"This tabular statement shows that the nine ships built in the navy-yards at New York and Mare Island and one ship built at Norfolk cost \$7,790,000 more than they would have cost if built at private yards.

"At this rate our new navy would have cost the American people \$70,000,000 more to construct in navy-yards than by private contract.

"The waste of money shown by Admiral Watt's figures is sufficiently great. As a matter of fact, the actual waste is much greater.

"In the case of the New York, now nearing completion at the New York Navy-yard, the cost to the Government in the way of indirect expenditures, payments on account of leave, holiday and disability, and payments made to employees in the classified service for drafting, accounting and clerical work, not a dollar of which is included in the 'limit of cost' of this ship, has aggregated a sum in excess of \$1,500,000. Under the system of accounting now employed at navy-yards this immense expenditure must be excluded from the 'limit of cost' of the New York. I hold in my hand a letter just received from the Secretary of the Navy, which gives these expenditures in detail. It reads as follows:

"Navy Department,

"Washington, April 13, 1914.

"Subject—Cost of Battleship New York.

"My Dear Mr. Jones:

"1. Referring to your letter of the 6th inst. requesting the cost to the Government of the battleship New York, including indirect expenses, such as leave, holiday, disability, clerks and draftsmen, there is given below such of the data requested as has been furnished to date by the navy-yard, New York, of the cost of the New York, exclusive of armor and armament:

Labor:	Hull.	Machinery.	Total.
Expended to March 1, 1914	\$1,825,308 66	\$634,735 19	\$2,460,043 85
Estimated to complete	77,508 60	36,343 44	113,852 04

Material:	Hull.	Machinery.	Total.
Expended to March 1, 1914	1,535,685 51	508,024 00	2,043,709 51
Estimated to complete	118,714 00	356,474 00	475,188 00
Indirect:			
Expended to March 1, 1914	615,447 12	202,269 30	817,716 42
Estimated to complete	26,120 40	11,593 56	37,713 96
Leave*			174,911 72
Holiday*			177,227 42
Disability*			46,073 94
Classified employees employed in construction of New York, but charged to current appropriations (estimate of commandant)			287,970 00
Leave and holiday of classified employees employed in construction of the New York (estimate of commandant)			28,500 00
Cost to Government of hull and machinery by reason of construction in navy-yard, according to returns received from New York			\$6,956,442 55

*Resulting from construction of New York and charged against appropriation "Increase of the Navy; Construction and Machinery."

"2. Attention is invited to the fact that the above total cost to the Government of the New York is subject to modification, as the final actual cost of work covered by the estimates to complete may be either more or less than the estimates mentioned above.

"3. The above statement of total cost to the Government of construction in the navy-yard, New York, includes expenditures for indirect charges under the existing system of bookkeeping; also expenditures for leave, holiday and disability which have resulted by reason of the construction of the New York. Such expenditures are lodged against the appropriation "increase of the navy; construction and machinery," which appropriation covers the cost of hull and machinery of the New York, but are excluded from the "limit of cost" of the ship by the phraseology of the appropriation act of March 4, 1911.

"4. The above total cost to the Government of the New York includes also the charges for classified employees while engaged in drafting, accounting and clerical work for the New York. In accordance with statute law such charges are covered by the annual working appropriations, and therefore are not included in the "limit of cost" of the vessel, although such expenditures result from the construction of the vessels.

"5. The commandant of the navy-yard, New York, reports that the total expenditures to March 1, 1914, on battleship New York, together with the small estimated amounts to complete the vessel, indicates a performance lower than the original estimates by \$113,750.50 under hull, and \$245,884.91 under machinery, or a total of \$659,635.41.

"Sincerely yours,

"JOSEPHUS DANIELS.

"Hon. William A. Jones, M. C.,

"United States House of Representatives.

"Washington, D. C."

"It seems from this letter that the actual cost to the Government of the New York, built at a public yard, is \$6,956,442.55, as against the contract price of the Texas, the sister ship of the New York, built by the Newport News Shipbuilding & Drydock Co., for the sum of \$5,830,000. In addition to the contract price of the Texas, there was something paid for extra work; but, with these amounts added, the contract-built ship Texas cost the Government more than \$1,000,000 less than the Government-built ship New York.

"It cannot be denied that the items set forth in Secretary Daniels' letter are part of the cost of building a ship. It ought not to be denied that Congress is entitled to full and exact information of the actual out-of-pocket cost of building a ship in a navy-yard. The present system of cost-keeping does not give this information. As I have pointed out, Admiral Watt, Chief of the Bureau of Construction and Repair, states that necessary items of cost do not appear in the official figures of ship costs. The items to which I have referred show that the costs thus omitted are very considerable.

"Congress should compel a system of cost-keeping which would continuously and succinctly keep before it the actual cost of public works proceeding under its authorization."

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ND THE

\$100,000,000 Bond Issue Arranged by Alabama Power Company

HYDRO-ELECTRIC PLANT ON COOSA RIVER TO BE DOUBLED IN CAPACITY
AT ONCE AND LARGE STEAM PLANT BUILT—FUTURE
PLANS OUTLINED.

The Alabama Power Co. has arranged to spend \$100,000,000 in carrying out its plans for great hydro-electric developments in the middle South. A loan has been secured through the placing of bonds for the large amount named.

Expenditures will be made throughout a term of years.

About \$4,000,000 will be used at once in more than doubling the company's present units of hydro-electric development on the Coosa River, near Birmingham; also in the construction of an auxiliary steam plant in the Birmingham district, possibly on the Warrior River.

Writing to the MANUFACTURERS RECORD of the company's plans, Mr. James Mitchell, president of the Alabama Company, New York, under date of March 4 makes announcements as follows:

"This company is now providing for a bond issue to be limited to \$100,000,000, of which \$4,000,000 has been placed for immediate needs, and further amounts can be issued when and as required.

"Contracts have been placed for a new hydro-electric unit at the Lock 12 plant on the Coosa River. This unit will be about 20,000 horse-power, or slightly larger than the original units.

"Plans are now being worked out for the installation of a 20,000-kilowatt steam plant, which is necessary to

safeguard the company's power supply in times of extreme drought. Contracts have not yet been placed for this plant, but will be placed during the coming week. The site has not been definitely selected, but there are many opportunities to place such a plant along the Black Warrior River basin, where coal can be cheaply obtained from numerous mines, so the choice of location is not a matter of immediate moment.

"The company plans extension of its transmission lines in a number of directions, and intends to be ready at all times to meet the demands of the community it serves."

In connection with the occasion for employing the \$96,000,000 not covered by immediate plans, it is stated that "the Alabama Company's ultimate development in Alabama is predicated upon legislation regarding power sites now sought in Washington and bears special reference to the use of Muscle Shoals. The large water-power site owners of the country are pressing certain legislation which is being as stoutly resisted by others who claim that too much encroachment upon the rights of the public is contemplated in the form in which the power site owners desire this legislation. The use of the remainder of the \$100,000,000 available bears relation to the ultimate future and the possibilities of favorable legislation."

GOVERNMENT ALIVE TO NECESSITY FOR NITRATE PLANT SOUTH.

Plans Point to Development of Great Hydro-Electric Development at Muscle Shoals, in the Tennessee River.

Washington, D. C., March 7.—[Special.]—In the army appropriation bill recently reported to the House, recommendation was made that there be established a large nitrate factory to be operated jointly by the United States Government and private interests for the manufacture of fertilizer in time of peace and nitrates for explosives in case of war. While no site is specified in the bill, the statement has been made by members of the Military Affairs Committee that the board which will be appointed to select such a site would naturally consider the vast water-power projects on the Tennessee River. The greatest of these is at Muscle Shoals.

The power for the nitrate factory would, of course, be furnished by water-power, and a considerable expenditure will be necessary for the improvement of Muscle Shoals. Though the Federal Government took over the old Muscle Shoals canal from the State of Alabama in 1828, after a land grant to the State of 400,000 acres, and though the first appropriation by Congress for the further improvement of this stretch of the river was made in 1828, and while the construction cost of the present Muscle Shoals canal up to the year 1890 has been \$3,191,726.50, and the operation and care of this canal since 1890 has been \$1,368,247.79, still the commerce passing through this canal has averaged only 11,800 tons each year for 22 years. This obstruction, like a cork stuck in the neck of a bottle, stops up the river commerce on a stretch of 404 miles of the Tennessee River itself in the two States of Alabama and Tennessee and on 227 miles of tributaries to the Tennessee in those States.

At the last session of Congress the United States army engineers recommended to the Rivers and Harbors Committee the adoption of a project which provides for three dams at Muscle Shoals, two to be power dams; dam No. 2, with a height of 102 feet and a length of 450 feet, requiring 1,304,700 cubic yards of cement, and dam No. 3, with a height of 48 feet and a length of 6285 feet, requiring 488,500 cubic yards of concrete. When these dams are constructed they will furnish open river slackwater navigation for nearly 100 miles on the Tennessee River itself, and improve navigation of two tributaries of the Tennessee River, namely, Elk River for 30 miles and Shoal Creek for 20 miles, mak-

ing a total improvement on the Tennessee River and its tributaries of nearly 150 miles.

The completion of the hydro-electric power development by the building of the lock and dam at Hales Bar, at a cost approximately of \$10,000,000, wholly at the expense of private parties, has contributed over 30 miles of open river slackwater navigation to the Tennessee River, and without any considerable expenditure on the part of the Government. But no important commerce has been developed by this valuable navigation improvement—without expense of the Government—because the commerce along this improvement of 30 miles, and especially the commerce of the city of Chattanooga, located on this stretch of improvement, has no outlet, being corked up by Muscle Shoals.

And now, fortunately for the taxpayers of the country, and luckily for the development of the natural resources and commerce in the vast drainage area of the Tennessee River, the costly navigation improvement of the Muscle Shoals stretch of the Tennessee River can be accomplished under a plan by which "through the development of water-power the United States Government is repaid all of its expenditure for navigation and water-power development, and becomes the sole possessor of all the things for which that expenditure was made."

The project carries with it the greatest single conservation plan on any one water course ever yet proposed to the United States Government. It is a plan by which the normal high-water flow of the Tennessee River is conserved to an extent which makes feasible the development of 680,000 horse-power at Muscle Shoals, where, except by the combination plan proposed, only 200,000 horse-power could be developed. This plan is possible only by the combination of power development on the Tennessee River with the proposed water-power development on the Tallapoosa River and the Little River, which are tributaries to the Coosa-Alabama River, in the State of Alabama. It is a conservation plan by which these combined hydro-electric developments, one at Muscle Shoals, on the Tennessee River; one at Cherokee Bluffs, on the Tallapoosa River, and one on Little River are made independently of each other, and by which 5,641,321 tons of coal would be annually conserved.

In the year 1890 the hydro-electric development at Niagara Falls was an experiment. Now, with its 450,000 horse-power, the development and its amazing economic influence on the affairs in the electro-metallurgical and electro-chemical industries of the world, it stands as an insistent precedent for the Muscle Shoals develop-

ment. The adoption by Congress of the Muscle Shoals project and its completion will mean cheap power for the manufacture of cotton fabrics from the cotton grown along the banks of the Tennessee River and in the Mississippi Valley. It will mean the cheap fixation of the nitrogen from the air as a fertilizer, known as "cyanamid," which competes with nitrate of soda in all its uses, and which is found only in Chile, from which country the United States for 31 years, from 1883 to 1913, inclusive, imported 6,516,031 tons of Chilean salt-petre, with a value of \$209,971,246.

Mr. Edison, in writing down what he considered the list of the world's greatest inventions since the electric light, wrote first "wireless" and second he wrote "nitrogen from the atmosphere, making nitric acid and cyanamid—making us independent of the exhaustion of the nitrate deposits of Chile."

The fertilizer bill of this country is now running at about \$120,000,000 annually, and nearly \$75,000,000 of this is in the Southern States.

The accomplishment of the Muscle Shoals project will mean the manufacture of ammonium phosphate, using the phosphate rock from the phosphate fields of Tennessee nearby Muscle Shoals, in combination with cyanamid. Ammonium phosphate contains about five times as much plant food as the ordinary fertilizer, making it correspondingly cheaper to handle, bag, ship and transfer from the point of manufacture to the farmer.

It will also mean that the bauxite deposits of the Southern fields can find the required ample low-priced hydro-electric power for manufacturing aluminum, and the commercial value of aluminum manufactured at Niagara Falls is \$5,000,000 a year.

CHATTANOOGA STEEL CO.'S CHARTER FILED.

Construction of Plant Expected to Begin
Within Few Days.

Chattanooga, Tenn., March 7.—[Special.]—The charter of the Chattanooga Steel Co., the \$2,000,000 organization mentioned in the MANUFACTURERS RECORD of last week, was filed here today. The charter is signed by the following incorporators: C. E. James, T. R. Preston, president Hamilton National Bank; Z. C. Patton, Jr., C. C. Nottingham, vice-president First National Bank; Webster T. James, Herbert Bushnell, vice-president Citizens' National Bank; W. A. Sudd, president Chattanooga Savings Bank.

The Converse Bridge & Steel Co. of Chattanooga will probably get the contract to fabricate and erect the steel for the buildings.

It is expected that ground will be broken at the site of the buildings within the next 10 days.

Many inquiries are being received as to the price and the allotment of stock. There will be no preferred stock or bonds and no promoters' stock.

Caustic Soda and Chlorine.

Chlorine and caustic soda will be manufactured at Kingsport, Tenn. by the Federal Dyestuff & Chemical Co. of New York. A one-story 200x300-foot building will be constructed for this plant, the equipment to include machinery for a daily capacity of 20 tons soda and 20 tons chlorine, these products to be utilized in manufacturing intermediate materials for making dyes. Electric power has been adopted, and from 3500 to 4000 kilowatts will be consumed. This \$15,000,000 corporation's plans to build a factory (now in course of construction) for dyestuffs and chemicals have previously been detailed.

Plans for \$250,000 Lumber Company.

A daily capacity of 75,000 feet of kiln-dried lumber is planned by the Carteret Lumber Co., which will install sawmill equipment costing \$50,000. This company has been incorporated with capital stock of \$250,000 and the following officers: George E. Major, president; T. S. White, vice-president; W. R. White, secretary; William B. Hudson, manager; offices and plant at Beaufort, N. C.

News and Views from Our Readers

To Construct Automobile Plants in Russia.

ALLEN BRETT, 722 Citizens' Building, Cleveland, O.

Sailing recently on the Norwegian American liner Bergensfjord, Benton Hopkins, representing Samuel Austin & Son, Cleveland, engineers and builders, and the Morgan Engineering Co. of Alliance, O., has started for Russia to open the way for the construction of a string of automobile plants. The plant immediately under consideration is the first one of a group of 27 very large self-contained plants of various kinds, which are to be erected in Russia as a part of a great movement for placing Russia on the map industrially. A group of influential Russian people are back of the project, and are very much in earnest in making Russia as independent as possible of outside countries in the procuring of the manufactured articles which they need. The first plant will be used for the manufacture of automobiles and motor trucks.

New Life in Charleston's Chamber of Commerce.

SIDNEY S. RITTENBERG, Publicity Secretary Chamber of Commerce, Charleston, S. C.

As one of the first steps in its expansion into a larger and greater organization, the Chamber of Commerce of Charleston, S. C., has acquired as its own home the two-story brick building at Broad and Church streets, formerly used by the Charleston Library. It is expected that necessary remodeling will be finished about May 1. Various departments will occupy most of the building, the remaining space being for meeting-rooms for the members.

As a result of a recent campaign the Chamber of Commerce has 1000 members and an annual income of about \$25,000, which makes it the second largest commercial organization in the South. It has entered upon what is expected to be a more active period than any it has yet had. Leading citizens of the community are earnestly lending their efforts to its work and the up-building of "The Plumb-Line Port to Panama" is proceeding vigorously.

Timely and Courageous Appeal.

WILLIAM H. COOK, 80 Maiden Lane, New York.

I want to pen a word of appreciation of your March 2 issue, copy of which I have stopped to read, at the expense of my business.

"A Prayer for the Nation" is most timely and a courageous appeal to the hearts of your readers. I have cut it out; also your Mr. Edmonds' telegram to the President, as another of the many evidences that in this time of stress and strain men should be and are turning to and praying to Almighty God for counsel and guidance. The influence of this appeal should be of great benefit.

Developing a Large Tract of Florida Lands.

JAMES B. RANSOM, President Orlando Securities Co. (Orlando, Fla.), General Offices Chicago, Ill.

We have just now gotten our titles in such shape that we are willing to make a statement of our plans for developing the 20,000-acre tract which we have purchased in Orange county near Orlando, Fla.

We have taken this tract to develop, not simply as a speculation. We are making our arrangements with farmers to sell in units not less than 40, preferably 160 to 640 acres. We are arranging a plan of development that will mean a gradual upbuilding in every way of the whole neighborhood. Our thought is that we can make every acre of land in that section worth from \$100 to \$200 an acre more in actual returns within the next five years.

We have a comprehensive plan for building up a community around one of our lakes, in which a number of college men have become interested. However, the bulk of the property is to be sold to plain, every-day farmers, who know just what they are doing, and who, while they will develop the land slowly, will bring just

the results we want. Our plan involves the purchase of some 80,000 acres additional land, and if it carries through as successfully as we think, we will control considerably more than this acreage during the next five or six years.

We are featuring the new product, termed Natal grass, and are paying very little attention to citrus fruits, believing that the general farming in the long run will pay our purchasers the best.

Recently Mr. H. I. McIntire has become our vice-president and general sales manager. Mr. McIntire has completed the sale of some 20,000 acres for the Genesee Lumber Co., and we consider him a great addition to our group. We are laying our basis this year on solid ground, and expect 1916 will be a banner year from a sales point of view.

Where the Aluminum Company's Plant Really Is Located.

R. B. OLIVER, President and General Manager the Oliver-Hill Construction Co., Knoxville, Tenn.

I note with much interest your article on page 50 of the MANUFACTURERS RECORD, and on page 24 picture of the Aluminum Company of America, which is being expanded. I also note that under the picture it says "between Knoxville and Maryville, Tennessee."

I live in Maryville, Tenn., and have lived there for a number of years, and have taken the MANUFACTURERS RECORD during that time, and am very much interested in Maryville. I cannot understand why every time an article comes out about the Aluminum Company there is always a notation "located between Knoxville and Maryville, Tenn."

Now, this plant is not between Knoxville and Maryville, and is not even on the road between these two places. The road that connects Knoxville and Maryville is known as the Knoxville-Maryville pike, and the property of the Aluminum Company is at a great distance from this pike. It is on the northwest side of Maryville, and adjoins the corporation line. We are proud of this corporation and glad to have this plant in our town.

A great many of our progressive citizens, when they heard of this plant's figuring on coming South, did everything they could to locate it at Maryville, and the reason Knoxville did not get it was because they did not wake up to the fact until it was too late, and I think it a great injustice to Maryville, every time an article comes out, to have it "located between Knoxville and Maryville." It is in Maryville, not between Knoxville and Maryville, any more than Kansas City is between Chicago and New York city.

Hands Off the Hip Pocket, Unless We Mean Business.

CHARLES E. CHIDSEY, Pascagoula, Miss.

It is pleasant to observe that the MANUFACTURERS RECORD keeps up its unwearied fight for preparedness. I think it may be said that every man in the South who thinks, and who is not obsessed with the idea that the Allies cannot send a large army across the oceans to attack America, and that they would not fight this country, no matter what the provocation might be, approves of the stand taken by the MANUFACTURERS RECORD. The assinine idea that this nation can safely defy five of the largest powers of the world—powers that, if I so may use the expression, "have tasted blood and thirst for more"—is one that is assiduously encouraged by what Adam Smith aptly described as "that insidious and crafty animal, vulgarly called a statesman or politician, whose councils are directed by the momentary fluctuations of the hour."

I have observed that those politicians that are most opposed to the President's plans of preparedness are also the ones who are most insistent on twisting the tail of the British lion. Some of our Senators, especially Hoke Smith, go so far as to say that the United States should put an embargo on the shipment of arms and munitions of war to Europe unless Great Britain within 30 days rescind her "orders in council," espe-

cially as to cotton. Should the United States take such a step it would be taking part and making itself an ally of Germany; in short, it would be tantamount to a declaration of war. But, say Senators Hoke Smith and Vardaman, it would only be a bluff, as Great Britain would back down when she saw us bluffing. It is ridiculous, this idea of trying to run a bluff upon five of the most warlike nations of earth, with an army of 90,000 men and a navy that ranks fourth among the navies of the world, as John Sharp Williams aptly put it.

It is said that "once upon a time" a near-sighted stranger landed from a train in a small Texas town, and, walking up the platform, eyed a burly Texan rather intently and reached his hand for his hip pocket. As the inquest it was shown that his hip pocket contained only a silk handkerchief for which he had reached. The judge at the trial very properly instructed the jury to bring in a verdict of not guilty, saying "that no man ought to put his hand on his hip pocket unless he means business."

Interested in Canvas Glove Manufacturing.

J. PLATT TURNER, King's Warehouse, Leakesville, N. C.

Am contemplating starting factory to make canvas gloves, and would like for you to put me in touch with concerns from whom machinery for same can be bought. Will want cutters, sewing machines and knitting machine for armlets.

N. M. McDILL, Cashier the Bank of Hickory Grove, Hickory Grove, S. C.

I am in the market for machinery for making canvas gloves, and would be pleased for you to put me in communication with the manufacturers.

Would Not Be Without It.

J. J. THOMAS, McDonald & Thomas, Inc., Raleigh, North Carolina.

In our line of business—flyscreens and hardwood floors—we find your journal most valuable, and would not be without it.

Central Bonded Cotton Warehouses Proposed for South.

R. R. DANCY, Houston, Tex.

About seven years ago a brilliant light loomed up in Texas, blazed for a brief period, then left the State, a forger and a fugitive. His name will neither add to or take from this article, so I omit it. He had a certain kind of capability, considerable influence and money to back him, and planned to build cotton warehouses in every inland center in Texas where more than 1000 bales of cotton were received in a season, provided local interests would contribute one-half the amount in stock and material. In this way he planned to control the cotton crop of the State in storage and marketing. He could never have brought his plans to fruition; the thought was there, the germ, but he had planted it upside down. Reverse the position and make a fresh start. Build large, up-to-date, central concentration warehouses, bonded, in Houston, in Dallas, in Waco, to begin with, secure against Texas investment, dollar for dollar, Eastern capital; employ good cotton classifiers and weighers; handle storage with reasonable charge and insurance. When this beginning is in working order, then commence building warehouses in the interior, letting each be an auxiliary to the main or central warehouse, and then watch. Every bale of cotton seeking low charges, liberal advances, quick and best marketing as well as the overplus of all small warehouses will come to be graded and weighed.

With intelligent marketing every town in Texas could get the same price for middling the same day. The certificates of the graded and carefully-weighed cotton at the central warehouse, in 100-bale lots, numbered under bonded warehouse guarantee, would be good and salable in any market in the world—in fact,

it would force the acceptance of our American cotton weight and grade, and thus stop for all time to come the miserable subterfuge of standards made up in Liverpool, Bremen and Havre. All American cotton must now conform to these standards or be subjected to arbitration, entailing comptroller fees, arbitration fees, awards and penalties scored against shippers and their shipments of cotton to foreign countries.

We have men born and raised in the cotton field, and reared in the cotton trade, who are the best cotton judges in the world, and better weighers. Let us assert our rights for the delivery of our cotton here, and if the foreign exchanges wish to continue their high-paid officials, let them arbitrate and prey on each other, and no longer depend on assessing American shipments to pay them. To do this we only ask up-to-date central bonded warehouses, located at Southern centers, and all to stand firm for delivery at same.

Some Suggestions to Florida.

JUDGE C. E. THOMAS, Prattville, Ala.

I recently went to Florida on an annual hunting trip, and I was impressed with the fact that the hunters, the cowboys and fence-riders were constantly setting fires in the forests, which are doing untold damage to that section by killing the pines and all of the younger growth. On this trip I rarely found a tree younger than 10 years old, showing that all of the smaller growth had suffered from the ravages of these fires, which are almost constantly burning. I would suggest that some steps be taken by the authorities looking to the prohibition of these fires. I have been making trips to Florida for the past five or more years, and each year I see changed conditions brought about by these fires.

There was another thing I noticed. Each year I see less and less cattle on the prairies. On this trip it was apparent to me that the packing-houses had drawn heavily upon the supply of cattle, as I saw fewer cattle on the prairies than heretofore, indicating that this particular industry was on the decrease.

Another fact that impressed me was the scarcity of game as compared with former years. This led me to believe that large parties of hunters have been visiting that section on hunting trips, who in former years before the European war had been accustomed to go to foreign resorts.

A Western Miner's Views of Georgia Gold Mining.

C. P. DROWN, Gainesville, Ga., late of California.

Since I began prospecting here in North Georgia for gold, a year ago, I find that this country is as rich as California in the yellow metal—maybe not so extensive, but fully as rich.

One thing is very plain to me—there had been no Western mining men or prospectors in this country up to the day I came here. For if there had been, these rich mining properties that I have found would not have been left laying out of doors idle all these years, but would have been taken up, developed and worked, and thousands of dollars taken out of them.

While many a "cracker" went to California and Colorado in early days, and many of them made money in those camps, none of them ever came back here to mine after learning modern Western methods. It seems that this country, in legitimate placer mining, has never advanced past the old gum-rocker, "long-tom" and ground sluice, except in a few instances where they put in small hydraulics from a one or two-inch nozzle; then they handled 90 per cent. of the gravel with a sluice fork. And in quartz mining a 5 or 10-stamp "pounding" mill is as far as they have advanced.

They know nothing whatever of tube mills, or even roller mills, and have no further device, absolutely, than quick-silvered plates to save the fine gold, but at that they made money.

I have seen surface showings here that, if we had the same in California or Nevada, Colorado or Montana, fortunes would be paid for them. And not a pick stuck in the ground.

But this country is in very bad shape now for the individual prospector, for as a result of old-time "promotions" the whole belt is mostly owned in large blocks

by those old corporations, and I find no one here who represents them, or knows anything about them, and such conditions shut out the prospector and discourages the would-be investor or operator.

The National Government or the State ought to take over those mineral lots and boundaries and throw them open to the public under the United States mining laws. Then there would be something doing in yellow in a short time. And it would extend into Alabama on the west and into the Carolinas on the northeast.

Millions were taken out of these hills and gulches in early days, in the flush times of Dahlonega, before and after the war. The United States had a mint there and coined tons of eagles and double eagles. But only the surface was worked; quartz mining was barely begun, and active mining ceased when the easy surface diggings were worked out. But I think a change is dawning, and the prospects for legitimate mining are looming up big for the old "Cracker State," the original gold-mining State of America. Let us hope so.

Represents the Spirit of the South.

THE J. L. MOTT IRON WORKS, New York.

We have been receiving the MANUFACTURERS RECORD for a number of years, and are pleased with its high character and the broadness of its views. It is the controlling representative of the spirit of the South.

We find your building and construction news serviceable, and hope to continue as subscribers as long as the present high standard is maintained.

Heartily Endorses Preparedness Editorials.

H. B. AUSTIN, Building and Electrical Contractor, Florence, Ala.

Find enclosed herewith check for \$6 in payment for two years' subscription to your great paper.

I have been reading with a great deal of pleasure your editorials on Preparedness, and most heartily endorse what you have to say.

Gasoline-Driven Railroad Coach Wanted.

WM. H. GRADY, Superintendent Jewell Ridge Coal Corporation, Coalton, Va.

We desire to secure a gasoline-driven combination coach suitable for hauling about 25 passengers and about an equal weight of baggage or express. This car is for operation on a small spur off the main line of a 4-foot 8½-inch gauge railroad.

A Satisfaction and an Inspiration.

WM. JOHNSTON, JR., Asheville, N. C.

I enclose my check to you, \$8, to advance my subscription three years from last expiration. It is not only a satisfaction, but an inspiration as well, to read the MANUFACTURERS RECORD from week to week.

Florida Yearbook.

A mass of cleverly compiled information is contained in the 1916 Yearbook of Development in Semi-Tropic Florida, published by the Tampa Tribune Publishing Co. Articles descriptive of Florida, containing much specific detailed information and supplemented by a wealth of photographic views of the beauty and material progress there, views which the country amply affords, are gathered from all points of the territory considered. Every phase of that land of variety is treated. Industry and commerce, farming, fruit, truck, staple, hay, stock, dairy, etc., homemaking, educational and recreational advantages, touring—these are some of the conspicuous aspects dealt with.

There are given valuable articles on such important subjects as the co-operative work of Florida farmers, aided by Government and State college agents, and land-owners' associations. Natal grass coming to the fore as a Florida money-maker is given thorough treatment. Good roads and education, two improvements that go hand in hand in most communities, are shown to the

advantage of that section, where both have received much attention and been brought to an admirable state of development. Besides the discussion of these and other topics covering the whole territory, there are separate articles on most of the communities or counties of Southern Florida, showing the peculiar advantages of each.

The large amount of effective advertising in the pages of the Yearbook attests to the progressive co-operation of Florida communities and business houses, and is interesting as it is noticed to be coincident with unusual rapidity and solidity in the development of the section at large.

Government Lands in Arkansas Opened to Settlement.

Upon the recommendation of Secretaries Lane and Houston, the President has signed a proclamation excluding from the Arkansas National Forest certain areas and providing for the restoration of the unwithdrawn public lands therein, amounting to 55,555 acres, to settlement under the homestead laws in advance of entry or other forms of disposition. Such lands will be subject to settlement only from 9 o'clock A. M., April 26, 1916, until and including May 23, 1916, and thereafter to entry and disposition under any public land law applicable thereto.

The excluded lands are generally mountainous, and lie along the exterior boundaries of the National Forest, in west-central Arkansas, in Saline, Garland, Perry, Yell, Scott, Montgomery, Pike and Polk counties. The best of such lands have passed into private ownership, and a small area is under withdrawal for power-site purposes. The unwithdrawn unappropriated public lands are interspersed throughout the exclusions, and portions thereof have some agricultural value. Such lands are in the Camden and Little Rock land districts.

Conference by Drainage Experts.

For the purpose of stimulating general and technical interest in drainage, flood protection and the reclamation of swamp and overflowed lands in Illinois, a Drainage Conference is being held this week at the University of Illinois, U. of Ill.

This conference also constitutes a forerunner of an annual short course on these important subjects.

The speakers and addresses at the conference have been selected with great care, and cover matters of special interest to State and county drainage officials, engineers, contractors, sanitarians, economists and public officials.

A number of interesting papers will be read by noted authorities on drainage work, including Isham Randolph, consulting engineer, of Chicago; W. L. Park, vice-president Illinois Central Railroad; Prof. A. B. McDaniel, University of Illinois; Hon. Le Roy K. Sherman, commissioner; Hon. John H. Nolan, State Reclamation Commission of Missouri; Prof. F. H. Newell, D. Eng., former director United States Reclamation Service; S. H. McCrory, chief of drainage investigations, United States Department of Agriculture; R. H. McWilliams, drainage contractor, Chicago.

The conference is expected to develop concerted action among organizations and individuals for the control of floods, the reclamation of lowlands and the conservation of the soil.

Fork Union Military Academy Erecting New Buildings.

Construction work will shortly be started on various buildings for the Fork Union Military Academy at Fork Union, Va. At present structures will be erected to accommodate 150 students, and \$50,000 will be expended in the next few months for building one dormitory, kitchen, dining-room and presidential apartment, a heating plant and lighting plant.

Brick for the construction of the buildings has been donated at actual cost, and the Chesapeake & Ohio Railway is contributing the freight on same.

This Academy was founded in 1897 by Dr. William F. Hatcher. Its present head is C. E. Crosland.

Much Activity in Coal Fields of Eastern Kentucky

Whitesburg, Ky., March 1.—[Special.]—George W. Fleming, president of the Elkhorn Coal Corporation, and other officials of the big corporation, have just made a tour of the company's extensive development and mining interests in the Fleming-Haymond-Hemphill coal field on Boone's Fork, in this (Letcher) county, and the Steele's Creek, Estill and Wayland fields on Beaver Creek, north of here, on Letcher-Knott border, and make the announcement of numerous increases and extensions in their big operations, among the largest in the new Kentucky field and next in importance to the Consolidation Coal Co.'s plants in the Jenkins-McRoberts field in this county.

Beginning March 1 some big extensions are scheduled to become effective. Four of the mines on Beaver Creek which have been idle since the depression in the coal market last year will be started with full day and night shifts, while the output of the seven mines in operation for about six months will be largely increased. These increases will necessitate the employing of some 500 additional miners in the Beaver Creek territory alone, with an increase of several thousand tons per day.

It is said the Beaver Creek branch of the Chesapeake & Ohio will be taxed to the limit to handle the big increase in the mines around Wayland, while it is safe to say that at least two short-line branches of the Chesapeake & Ohio will be built into undeveloped fields along Beaver Creek tributaries during the year.

At the same time announcements come from Fleming and Haymond that large increases are to be made in the company's plants there, necessitating the employing of several hundred additional miners. Already construction has been started on 100 additional miners' houses—50 in Fleming and 50 in Haymond. These will be rushed to completion as rapidly as possible.

It will be remembered that during November the company was reorganized and its name changed from the Elkhorn Fuel Co. to the Elkhorn Coal Corporation, taking in new properties, new stockholders and increasing its capital stock from \$10,000,000 to \$28,600,000, the stockholders and incorporators being: Alfred Dyer, New York; Nicholas F. Lenssen, Englewood, N. J.; Edward C. Kerr, New York; Louis F. Schwartz, New Rochelle, N. J.; Frank C. Titus, New York; Geo. W. Fleming, New York, who was made president of the corporation. The company owns large tracts of coal lands in both the Beaver Creek and the Boone's Fork fields of Eastern Kentucky.

In order to meet the heavy demand of Elkhorn by-product coal, owing to its adaptability to the operation of iron and steel plants, large advance orders have been placed aggregating millions of tons for delivery from the mines in the Elkhorn region during the next 18 months. The Consolidation Coal Co. will make a large increase in their output from the McRoberts-Jenkins fields, owing to the unprecedented demand for the product, which in every particular equals the Connellsville coal of Pennsylvania. It is said that a number of new mines are to be opened within the next few weeks.

An average of 500 cars daily are now going out from the Consolidation's plants.

Coal business all over Eastern Kentucky is booming, keeping pace with prosperity that is everywhere evidenced throughout the South.

The East Coal Co., organized a few days ago to make developments in the new coal field of the Clover Fork district of Harlan county, is starting the work of construction of a first-class mining plant. It will develop about 1000 acres. A number of other companies will develop large areas in that section. The Louisville & Nashville Railroad Co. lately completed a branch line into the Clover Fork section.

The Wisconsin Steel Co. at Benham, Ky., is planning a number of increases to its plant, one of the largest coking plants in the whole of the Eastern Kentucky field. Two or three new mines are to be opened.

The Harlan Coal Co., the Moss-White Coal Co. and the Martin's Fork Coal Mining Co. are planning extensions during the spring months in their plants adjacent to Harlan. The Washto & Black Mountain (the Louisville & Nashville) into the Harlan county field is

rapidly becoming one of the heaviest coal carriers in Eastern Kentucky.

In the Perry county field, below here, on the Louisville & Nashville, there is much activity in coal mining; the 15 to 18 operations adjacent to Hazard are running full time, with both day and night shifts. The recent supply of light and power for the different plants from the big new Kentucky River Power Co.'s plant at Glowmar, Ky., has greatly facilitated mining operations, and every plant is running now without a "hitch." The new First Creek territory is the center of attraction, however, for coming new fields of Perry county, shipments having already started from three of the four rising new plants reached by a branch of the Louisville & Nashville, lately completed. The Blue Diamond Coal Co. has announced its first shipments about March 1, while the Harvey Coal Co., the First Creek Coal Co. and the Bluegrass Coal Co. have already been shipping coal. Slips and slides along First Creek much delayed the work. Transmission lines from the Kentucky River Power Co.'s immense plant at Glowmar was lately completed to these plants, and they are now receiving their supply from there.

The Daniel Boone Coal Co. at Lennett, Ky., immediately below Hazard, is erecting a concrete tippie and opening two additional mines, as well as a large number of miners' houses. April 1 will see a large increase in the tonnage of this company.

Both the Ashless Coal Corporation and the Kentucky Jewel Coal Co. at Lowthair, Ky., immediately above Hazard, have started a number of improvements in their plants, while the Diamond Block Coal Co., the Buffalo Coal Co. and others in the new Buffalo Creek field are rapidly getting into readiness to begin shipping coal. Within 60 days no less than 20 companies will be shipping coal out from the Hazard field, while this number is likely to be increased before summer, a number of leases now being made for property to be developed at once. A large number of operators of West Virginia, Virginia and Tennessee are in that section making new leases.

It is safe to say that within three months coal shipments will be easily doubled from this field. At this time about 200 cars are going out from this field daily, and with the developments well under way it is believed this field will have an output of 500 cars.

There is unusual activity throughout the whole of the new Kentucky coal field. This year's coal tonnage will see a phenomenal increase, due largely to the gigantic forces now combining in Eastern Kentucky for the development of the extensive coal fields hereabouts. It can be said at this time that developments are pretty well equally divided in Pike, Floyd, Letcher, Perry and Harlan counties, comprising the heart of the coal belt.

SUBSTANTIAL BUYING MOVEMENT IN BIRMINGHAM PIG.

Optimism Prevails in Every Feature of the District's Activities.

Birmingham, Ala., March 4.—[Special.]—The Birmingham pig-iron market has awakened from its recent lethargy, and conditions have gradually reached a healthy and normal state. There is really a substantial buying movement on at the present time, though of a very quiet nature. The base price has settled to \$15 for first half and \$15.50 for last half delivery, and during the past week one interest booked from 20,000 to 25,000 tons; another from 10,000 to 15,000 tons. In fact, the total bookings for the week were in the neighborhood of 40,000 to 50,000 tons on above base prices. Buyers have taken their "cue" from the settled base price, and have quietly stepped in and covered their wants. The large pipe interests have not yet covered their wants for the balance of the year, and with their coming in the market for a large tonnage there is no other solution save a substantial advance in price. Some are predicting \$18 to \$20 pig-iron by the beginning of the third quarter. There are several things that will have their bearing on such a situation. Under

present unprecedented conditions there has not yet been sufficient criterion to demonstrate just where the country stands with respect to consumption as compared with production. If it were left to the steel situation to decide, there would be no doubting, but the question is, Is there sufficient general improvement in foundry conditions to warrant present-day production of foundry iron? This question can only be answered by the railroads and the building interests of the country—private, municipal and corporate. At any rate, the producers of pig-iron are certainly optimistic in the extreme.

Following prices, per gross ton f. o. b. cars Birmingham, are fairly representative:

No. 1 foundry and soft.....	\$15 00 to \$16 00
No. 2 foundry and soft.....	15 00 to 15 50
No. 3 foundry.....	14 50 to 15 00
No. 4 foundry.....	14 25 to 14 50
Gray forge.....	14 00 to 14 25
Basic.....	15 00 to 15 50
Charcoal.....	23 50 to 24 00

Cast-iron pipe manufacturers are running their plants on full time, some overtime, and prices are being well maintained. There has not yet been another advance in prices announced, but with a further stiffening of pig-iron prices it is certain that this product will be among the first to record a sympathetic advance. As a rule, the large pipe interests stay out of the market until a late date, then come in with a "whoop" and start buying movements. Following prices are quoted per net ton f. o. b. cars at the works, standard pipe: Four-inch to six-inch, \$28; six-inch and up \$25, with \$1 per ton extra for gaspipe and 16-foot lengths.

Dealers in old material report a very much stronger tone to the market, with indications pointing to a revival upward in prices. The demand is exceptionally good for No. 1 machinery and steel scrap. Following prices are quoted per net ton f. o. b. dealers' yard:

Old steel axles.....	\$13 75
Old steel rails.....	12 25
No. 1 steel scrap.....	10 25
No. 1 wrought scrap.....	9 75
No. 1 cast scrap.....	10 50
Heavy melting scrap.....	10 25
Stove and light cast.....	8 50
Old car wheels.....	10 25
Tram car wheels.....	10 00

The demand for Alabama coke has become so urgent that preparations are being made on every hand for the pressing in of several hundred more old beehive ovens. The past week the Louisville & Nashville Railroad Co. established what it terms "milling in transit" coke rate. This is a uniform rate of 17½ cents per ton on coal from mines to ovens, for coking, within the 25-mile zone. This decision on the part of the railroad has been a boon to the commercial coal operator, and will enable him to dispose of large tonnages of slack coal for coking purposes. Furnace and smelter coke is being sold today from \$3 to \$3.50 per ton at the ovens, and foundry coke \$4 per ton at the ovens.

Steam coal has shown a decided improvement, but domestic coal is not so active. In line with the Government's promise to give Alabama coal a fair test on its war vessels, the Imperial Coal & Coke Co. received an order this week to coal a vessel in the harbor at New Orleans for this test.

The Cotton Movement.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight during the first seven months of the season was 9,838,244 bales, a decrease under the same period last year of 2,260,787 bales. The exports were 3,534,658 bales, a decrease of 1,763,476 bales. The takings were, by Northern spinners, 2,004,205 bales, a decrease of 47,391 bales; by Southern spinners, 2,917,693 bales, an increase of 697,082 bales.

Sulphuric Acid from Freeport Sulphur.

Sulphuric acid from sulphur mined by the Freeport (Tex.) Sulphur Co. will be the principal product of the Sugar Land (Tex.) Manufacturing Co., mentioned February 24 as incorporated with \$300,000 capital. The total cost of installing the plant will be \$150,000, the machinery and requisites for construction having

The plan to make sulphuric acid from sulphur instead of depending upon pyrites is an important outcome of the heavy demand and high prices for the acid now prevailing.

Road Builders Hold Big Meeting

ANNUAL CONVENTION AND EXHIBITION IN PITTSBURGH BRINGS TOGETHER
MANY ROAD ENGINEERS AND CONTRACTORS FROM ALL
PARTS OF THIS COUNTRY AND CANADA.

[Special Correspondence Manufacturers Record.]

Pittsburgh, Pa., March 6.

The Thirteenth Annual Convention, the Sixth American Good Roads Congress and the Seventh National Good Roads Show were held jointly in Pittsburgh last week under the auspices of the American Road Builders' Association, and served to bring together a large number of engineers, road officials, contractors and others interested in modern road and street improvement from all parts of the United States and from Canada.

The various events of this good-roads week were opened by a public mass-meeting arranged jointly by the Pittsburgh Chamber of Commerce and the Road Builders' Association. This meeting was presided over by James F. Burke, formerly a member of Congress, and was addressed by Dorsey W. Shackelford of Missouri, chairman of the House Committee on Postoffices and Post Roads, who spoke on "Good Roads and the Government."

Others addressing the meeting were Governor Elliott W. Major of Missouri, State Highway Commissioner E. M. Bigelow of Pennsylvania and Senator Philander C. Knox.

The Good Roads Congress was formally opened on the second day by addresses of welcome on behalf of the city, State and country, all of which were responded to by President Stevens of the association. The regular sessions of the congress which followed were held in the mornings and afternoons of the remaining four days, and at these the following papers were read and discussed:

"Railway Track Construction in Paved Streets," R. Keith Compton, Chairman, Paving Commission, Baltimore, Md.

"The Control of Openings in Pavements," N. S. Sprague, Chief Engineer, Bureau of Engineering, Pittsburgh, Pa.

"Recent Developments in the Building of Concrete Roads," W. D. Uhler, Chief Engineer, Pennsylvania State Highway Department.

"A Contractor's Suggestion to Engineers and Inspectors," John H. Gordon, Contractor for Road Improvements, Albany, N. Y.

"Adaptability of Paving Materials to Different Conditions and Localities," F. C. Pillsbury, Division Engineer, Massachusetts Highway Commission.

"Roads at Low Cost for Moderate Traffic," F. E. Everett, State Highway Commissioner of New Hampshire.

"Brick Streets and Roads," H. E. Breed, First Deputy Commissioner, New York State Commission of Highways.

"Recent Tendencies in Stone Block Pavements," Chas. F. Knowlton, Manager, Paving Department, Simpson Bros. Corporation, Boston, Mass.

"The Function of Stone in the Bituminous Concrete Pavement," R. B. Gage, Chemist, Department of Public Roads of New Jersey.

"Foundations for Roads and Streets," Jos. W. Hunter, First Deputy Commissioner, Pennsylvania State Highway Department.

"The Columbia Highway," Henry L. Bowlby, former State Highway Engineer of Oregon.

"The DuPont Road," Chas. M. Upham, Chief Engineer, Coleman, Du Pont Road.

The number of papers at each session was held to two or three, in order that each subject presented might be fully discussed and thus enable those participating to obtain the benefit of the knowledge and experiences of attending engineers from all parts of the country.

It has been this feature of the Road Builders' conventions that has made this annual event important to those interested in the design and construction of modern roads and streets. This is primarily so because this convention is attended by so many of the leading highway engineers from every part of the country; consequently the full discussion by them on any subject enables the attending delegates to keep posted on the advances that are steadily being made in all phases of modern road and street design, construction and maintenance.

In his address President E. A. Stevens touched upon some very interesting matters relating to the question of proper road improvements. He said in part:

The task of raising and spending the billions necessary for a proper system of roads that our industrial development loudly demands is a serious business proposition. It represents an investment too long delayed and one whose importance is each day more strongly emphasized by the

triumph of the American engineer and mechanic in the production of the motor vehicle. The road problem is fast reducing itself to one of dollars and cents; to producing roads that will carry given weights at the smallest cost. It is in this very aspect of the case that the efforts of associations of men drawn together by their interest in roads can be usefully exerted, and when, to the interest that is common to all enlightened citizens, there is added special knowledge in the actual work of designing, building, maintaining and financing roads, a special capacity for valuable service exists that entails a duty to the commonwealth.

The work of persuading the people that they need good roads in their daily business is almost done. The stern logic of the survival of the fittest is beginning to make itself felt in those communities that have neglected their highways. This inexorable law of nature will soon make its results so plain that no other argument will be needed. What is needed today is not the preaching of the gospel of good roads; nor is our great need the discovery of that impossible myth, the one best road for all conditions.

The underlying principles of road construction are as fairly well known as is any problem of design in these days of rapid changes and dazzling progress in engineering practice.

In the press of insistent demands for good roads it has been and it is hard to get above the mass of technical detail, the close and accurate study required for each new design and the web of red tape that is but too apt to hamper all public work. Yet above these we must rise if we are to do full justice to our job. We must face, weigh, discuss and determine on those principles that must furnish the foundation for a successful administration of our roads. For this we must have interchange of experiences and ideas. Such is the purpose of this convention. From a neglected and unimportant link in our great system of transportation, our highways are fast becoming a system rivaling our railways in importance. They deserve and they must receive the same characteristically American treatment if they are to yield the return which the people and the industries of this country are entitled to receive. It has always been characteristic of the American—and, above all, of the American engineer—that whatever study he may devote to the practice of older nations, he works out, adapts and adopts for his purposes a solution indicated by the peculiar conditions under which his work must be done, for which it must stand the test of service and in the stress of which it must make good.

In the case of our roads it is especially true that these conditions include not only the physical and industrial features, but the peculiar mental attitude of the people and their political organization and traditions. It is a worn truism to say that we must keep politics out of our road work. The question is how are we to do it. In the right answer to this question it seems to me we shall find many of the principles which we must recognize as necessary to the solution of our problem. To me it seems useless to expect to end the demoralizing effect of a spoils system of patronage, of "log rolling" and of the "pork barrel" unless we can put the work in the hands of a body of men who by their personal character, trained ability and devotion to their work will earn and deserve the confidence of the public. Such a body of men does not grow on the bushes; the individuals exist today—to make an effective force these must be organized, trained to act for one end and imbued with that spirit of teamwork that makes the successful combination of men, be they a football team or the force of one of the great mills of this city.

Such a force will be at its best only when it can point to the results of its work; when each unit can compare its useful output with that of its neighbor and devise new ways of effecting savings or increasing returns.

I had the honor of calling the attention of this association to one aspect of this need at the annual meeting. That detail—namely, the establishing of a traffic unit which would express the value of the return given by the road, with due regard not only to the weight transported, but to the speed at which it is moved—acquires its importance not as a mere piece of curious information, but because without it we shall never express the true value of road-work. Without this unit we can never prove to the American people that their road forces should not be tampered with, should not be expected to furnish soft berths for the deserving of any political party and that they can be relied on to do their duty and yield a return if they be given the chance.

The job as a whole is worthy of great men—worthy, for example, of such great administration engineers as Pennsylvania has produced in Fritz and Taylor; worthy of the organizing power that has made Pittsburgh synonymous with productive efficiency.

At the close of the convention various resolutions were adopted, among which the following are of special interest to State, county and city officials:

That this association invites the attention of all State, county and all municipal authorities to the value of traffic censuses as a means of recording and determining the relative values of various forms of pavement and road construc-

tion, and would strongly recommend that systematic traffic censuses be taken from time to time on all classes of roads and pavements in order that more definite knowledge of the economic value of the different types of construction may be obtained.

That in taking such censuses separate counts should be made of horse-drawn vehicles, light and heavy, and of motor vehicles, classified as pleasure and commercial cars, with notes as to the use of especially heavy trucks and vehicles with tires especially injurious to roads. Where it can be used, in order to obtain comparable information, the standard form for taking traffic census as reported by a committee of the American Society of Civil Engineers is recommended.

That where funds for road construction are raised by an issue of bonds, this association urges that the serial form of bond by which a part of the principal is paid off each year be adopted in preference to bond issues to be paid by accumulations in a sinking fund.

That this association urges that laws be passed and enforced in each State establishing reasonable limits for the weight, dimensions and speed of heavy motor vehicles.

That in the matter of military preparedness a system of properly located and improved roads is of vital importance.

The Good Roads Show, held in connection with the meeting, covered a wide range of materials, equipment and supplies used in such work. The big hall which housed these exhibits was practically filled, while several large working exhibits were placed on the outside, next to the convention hall.

The exhibits included those of a number of leading companies making various classes of road-building material, such as asphalts, patented pavements, binders, road oils, brick, wood block, asphalt blocks, slag, hydrated lime, expansion joints, etc. At a number of these booths sections of the different classes of pavements were shown, as well as samples of materials, and engineering experts connected with these exhibits explained in detail the features of the different kinds of materials.

In the machinery line the display was quite extensive, there being road rollers, traction engines, road oilers, graders, scarifiers, concrete paving mixers, excavating equipment, steam shovels, rock crushers, contractors' engines and cars, gravity carriers, contractors' pumps, tools and appliances of various kinds, and practically every variety of machinery that is used in different types of road building.

One of the striking features of the Show was the large number of motor-truck exhibits, these trucks being especially designed for road and street work, and as they have become recognized for their economic value they naturally attracted wide attention on the part of attending delegates.

Other interesting exhibits included those of steel forms for the construction of concrete roads, curbs, gutters, etc.; engineering instruments of all kinds, laboratories for analyzing and testing all classes of paving materials, cast-iron pipe and hollow tile blocks for sewers and culverts, likewise corrugated-iron culverts and many other specialties used directly or indirectly in some phase of road and street design and construction.

Several of the highway departments of cities and States had attractively arranged booths, in which photographs and maps were displayed showing their methods of operation and the character of the design and construction in different classes of their work. These included the Bureau of Engineering of the city of Pittsburgh, with plots and photographs of raising streets in the flood district and the paving of streets. The Pittsburgh Railways Co. showed actual-sized sections of their track construction from the early days and crude methods to the modern way of building street-car tracks. The Bureau of Highways of New York city had numerous photographs and charts illustrative and descriptive of its system of operation. The Road Department of Alleghany county, Pennsylvania, had a number of maps and photographs showing county road and bridge work.

The Department of Public Roads of New Jersey exhibited its system of county road construction through appropriate charts and photographs. The Highway Department of the State of Pennsylvania likewise had maps and photographs descriptive of its work, and also distributed copies of its official bulletin which is issued to keep the people posted on what is being done.

These various city and State maps proved exceptionally interesting to visiting delegates because of the especially modern manner in which the work in these States is being conducted.

Among the material, machinery, equipment and supply firms which had exhibits were the following:

Acme Road Machinery Co., Frankfort, N. Y.; Asbestos

Protected Metal Co., Pittsburgh, Pa.; Asphalt Block Paving Co., Toledo, O.; Atlantic Refining Co., Philadelphia, Pa.; Autocar Co., Ardmore, Pa.; Baird Machinery Co., Pittsburgh, Pa.; John Baker, Jr., New York-Chicago; Ball Engine Co., Erie, Pa.; Barrett Co., New York, N. Y.; Bitulized Paving Co., New York, N. Y.; Bituminized Road Co., Kansas City, Mo.; Blaw Steel Construction Co., Pittsburgh, Pa.; Brinker Supply Co., Pittsburgh, Pa.; Buffalo Steam Roller Co., Buffalo, N. Y.; Buff & Buff Mfg. Co., Jamaica Plain, Mass.; the Philip Carey Co., Lockland, Cincinnati, O.; Cast-Iron Pipe Manufacturers, New York, N. Y.; F. L. Chase Co., Columbus, O.; Cochran Pipe Wrench Co., Chicago, Ill.; Concrete Products Co. of Pittsburgh, Pittsburgh, Pa.; Connery & Co., Inc., Philadelphia, Pa.; Contractors' Machinery & Supply Co., Pittsburgh, Pa.; F. D. Cummer & Son Co., Cleveland, O.; Eugene Dietzgen Co.; Domestic Engine & Pump Co., Shippensburg, Pa.; Dunn Wire-Cut Lug Brick Co., Conneaut, O.; Duquesne Slag Products Co., Pittsburgh, Pa.; Jos. N. Early, New York, N. Y.; B. K. Elliott Co., Pittsburgh, Pa.; Gallon Iron Works & Mfg. Co., Gallon, O.; Garford Motor Truck Co., Lima, O.; Good Roads Machinery Co., Inc., Kennett Square, Pa.; W. & L. E. Gurley, Troy, N. Y.; Hastings Pavement Co., New York, N. Y.; Heltzel Steel Form & Iron Co., Warren, O.; Hetherington & Berner, Indianapolis, Ind.; Robert W. Hunt & Co., Chicago, Ill.; Chas. Hyass & Co., New York, N. Y.; Hydrated Lime Bureau, Pittsburgh, Pa.; International Harvester Co. of America, Pittsburgh, Pa.; Jaeger Machine Co., Columbus, O.; Keystone Driller Co., Beaver Falls, Pa.; Koehring Machine Co., Milwaukee, Wis.; Locomobile Co. of America, Bridgeport, Conn.; McCarter Asphalt Block Press, New York, N. Y.; McCurdy-May Co., Pittsburgh, Pa.; Donald McNeil Co., Pittsburgh, Pa.; Mathews Gravity Carrier Co., Ellwood City, Pa.; National Paving Co., Scranton, Pa.; Northwestern Steel & Iron Works, Eau Claire, Wis.; Orenstein-Arthur Koppel Co., Koppel, Pa.; Packard Motor Co. of Pittsburgh, Pittsburgh, Pa.; Pennsylvania Dolarway Co., Carnegie, Pa.; Pierce-Arrow Motor Car Co., Buffalo, N. Y.; Pittsburgh Testing Laboratory, Pittsburgh, Pa.; Pittsburgh Wood Preserving Co., Pittsburgh, Pa.; Robeson Process Co., New York, N. Y.; Chris. D. Schramm & Son, Philadelphia, Pa.; I. W. Scott Co., Pittsburgh, Pa.; Standard Oil Co. of Indiana, Chicago, Ill.; Standard Oil Co. of New York, New York, N. Y.; Sterling Motor Truck Co., Milwaukee, Wis.; Turbine Sewer Machine Renovating Co., Milwaukee, Wis.; United Gas Improvement Co., Philadelphia, Pa.; U. S. Asphalt Refining Co., New York, N. Y.; U. S. Cast-Iron Pipe & Foundry Co., Burlington, N. J.; Wadsworth Stone & Paving Co., Pittsburgh, Pa.; Warren Bros. Co., Boston, Mass.; Warren-Knight Co., Philadelphia, Pa.; Wiard Plow Co., Batavia, N. Y.

The officers of the association which had this meeting in charge are as follows: President, Col. E. A. Stevens, Commissioner of Public Roads of New Jersey; first vice-president, A. W. Dean, Chief Engineer Massachusetts Highway Commission; second vice-president, Austin B. Fletcher, State Highway Engineer of California; third vice-president, Wm. H. Connell, Chief, Bureau of Highways and Street Cleaning, Philadelphia, Pa.; secretary, E. L. Powers, New York city, and treasurer, Major W. W. Crosby, consulting engineer, Baltimore, Md.

Opportunities at Thomasville.

Situated on the main line of the Southern Railway, midway between Washington and Atlanta, and also on the Carolina & Yadkin River Railway, in the heart of the great Piedmont region of North Carolina, Thomasville is called in a pamphlet recently issued by Frank D. Jones, city manager, "The City of Opportunities." The city has 22 factories, consisting of cotton mills, furniture and chair and woodworking factories, hosiery mills and machine shops annually producing \$3,000,000 of manufactured products that are shipped to all parts of the country. The main transmission line of the Southern Power Co. is tapped by a substation, from which electric power can be furnished manufacturers.

Extending southward from Thomasville the Carolina & Yadkin River Railway reaches into the heart of a fine agricultural and timber section connecting with the Southbound Railroad and thus affording a direct connection with the Atlantic Coast Line and Norfolk & Western railroads. A belt line of the Southern Railroad on one side of the city affords several miles of factory sites.

Ample school and church facilities make the town one suitable for home-making, and water supply and sanitation are provided by a recently installed modern artesian water system and sewerage system. Streets and sidewalks are being improved by the civic government. A bill lately passed by Congress carries an appropriation for a postoffice at Thomasville.

Additional new machinery will be installed by the Orion Knitting Mill of Beaufort, N. C.

"Florida Afire for Good Roads"

THE STATE SETS THE PACE FOR THE COUNTRY.

By JOHN W. SIBLEY, Birmingham, Ala.

Some impressions of my tour of Florida during the past month in the interest of permanent highways may be of interest to other sections working for good roads.

The thing that impressed me most forcefully was the



GETTING AWAY FROM BAD ROADS. A SHARP CONTRAST TO THE SPLENDID HIGHWAY SHOWN IN ACCOMPANYING ILLUSTRATION.



WINTER PARK-ORLANDO ROAD PAVED WITH DUNN WIRE-CUT LUG BRICK, CEMENT GROUTED.



ANOTHER OF FLORIDA'S FINE BRICK ROADS, CONNECTING JACKSONVILLE AND ST. AUGUSTINE.

splendid spirit of co-operation on the part of all classes of citizens in the various counties of the State, in putting through bond issues to provide highways to serve the future as well as the present generation. It is a matter for great commendation that the leaders in the various communities had the courage as well as wisdom and foresight to make their plans on a scale that would stagger some of our older and more densely populated sections of the South, and the example which Florida has set should not only be emulated all over the South, but should cause some of our large centers to ponder the situation carefully and bestir themselves, or they will be outstripped beyond the hope of overtaking by these hustling and patriotic Floridians.

A word in retrospect. Some six years ago Duval county, of which Jacksonville is the county-seat, began to agitate the question of building dependable highways, with the usual opposition from the chronic pessimists that infest every community.

The county commissioners put down a mile of sample highway in various directions from the city of Jacksonville. As soon as these stretches of pavements were laid the people began to appreciate the advantage of such pavement. Every farmer for miles around who had occasion to drive over the brick-paved stretches of the different roads, such as the King's road, the Lake City roads, the Lem Turner road and the Pablo Beach road, became a firm advocate of bonding for roads. All the arguments in the world would not have convinced him half as quickly as this demonstration.

This was followed by an election for \$1,000,000 of bonds, which carried overwhelmingly and the present splendid brick highways were constructed.

Paved roads increase land value. That has been proved everywhere that roads have been paved, and it was demonstrated in Duval county.

Other counties in Florida took notice and agitation began in various sections of the State for bond issues to lift the population out of sand and mud.

In 1913 Hillsboro county, of which Tampa is the center, voted \$1,000,000 of bonds and completed last year its splendid system.

On my recent visit I found that the wholesale houses in Tampa were sending goods in large motor trucks to the outlying towns in the county and the traffic had grown so that trailers were attached. The country merchant could 'phone his order in the morning to the jobber at Tampa and get his goods delivered at his store that afternoon.

The building of the pikes has caused the automobile industry to flourish, and some afternoons almost a continuous cavalcade is seen. I rode from Tampa to Plant City and back one afternoon, and was delighted at the entire absence of dust, as I did not need the whisk-broom treatment at all.

Following closely on the heels of Hillsboro came Orange county, with Orlando as the central point, with a \$700,000 bond issue and the construction of 75 miles of as fine brick highways as can be found anywhere in America. Through this county the Dixie Highway extends for 42 miles, a solid ribbon of brick, and Osceola county has extended it three miles to the town of Kissimmee.

Almost coincident with Orange county was the voting of \$750,000 by St. Johns county and the connecting with Duval county part of the Dixie Highway, taking it through St. Augustine to the Southern boundary, a total distance of 70 miles.

Large bond issues were voted in the latter part of 1915 for similar highways by Putnam county, \$250,000; Seminole, \$250,000, and Colusia, \$1,250,000, which will fill the gap between St. Johns county and Orange county.

There is a campaign on at present in Polk county for a large bond issue approximating \$2,000,000, part of which will be used in connecting Kissimmee with Plant City via Lakeland, thereby giving a brick highway 250 miles long connecting the two great cities of Jacksonville and Tampa.

Pinellas county, of which Clearwater and St. Peter's

burg are the principal cities, has voted \$750,000 bonds and let contracts for a system of brick highways.

De Soto county is now building \$200,000 worth of brick highways, and Manatee county is doing the same.

Escambia county, Pensacola county-seat, has begun a campaign to vote \$1,000,000 of bonds in the fall.

On the East Coast Brevard and Dade counties have voted about \$1,000,000 of bonds for shell roads to be treated by oil asphalt penetration methods.

Leon county, in which Tallahassee is located, will shortly let contract for \$200,000 of highways.

Lake county is building \$100,000 of sand-asphalt roads, and others are agitating bond issues.

I never saw a State so on fire with the good-roads spirit as Florida.

Of course, all over the South the question of good roads is a matter of keen interest and public discussion, but none of her sister States has yet grasped, like Florida, the true conclusion that permanency should be and is the keynote of all construction, and that building well at the outset means economy in the long run.

In Florida's case, as you have had occasion to observe, it is already meaning large financial returns in the influx of tourists in greater numbers and the bringing of cars with them from all sections. As an example, I noticed in Daytona automobiles from Maine, New York, North Dakota, Michigan, Illinois, Indiana, Wisconsin and many other far Northern and Western States. The coming of tourists means the location of many desirable citizens and capital for the development of the country.

The MANUFACTURERS RECORD has played no small part in this work by its constant preaching of the doctrine of good roads, and I know these facts will be gratifying to you and be used with good effect in encouraging the rest of the South to look at Florida and take courage and go forward.

Southern Building in February.

The following figures, as compiled from reports from representative cities, present a brief summary of Southern and Southwestern building operations during February.

More permits for two-story dwellings, it is stated, were issued in Baltimore during the month than in any February in the history of the building inspector's office. These permits included 208 structures to cost \$346,200. The estimated cost of new improvements of all kinds reached a total of \$1,402,568, alterations \$168,600 and additions \$56,055.

Operations in Richmond, Va., show an increase of about \$100,000 for the month as compared with the corresponding month last year. Permits were issued for construction to cost about \$375,000, of which about \$332,000 was expended for new construction. February figures for Newport News are not available, but it is estimated that \$350,000 worth of buildings were erected during 1915. A total of 30 permits have been issued so far during 1916.

In Winston-Salem, N. C., a total of 56 permits was issued during the month, representing a cost of construction of \$66,038. As compared with February, 1915, these figures show an increase of \$42,664. Permits were issued in Raleigh for construction to cost \$29,415 for February, exclusive of the last day of the month, and since the middle of January permits have been issued for construction to cost \$52,015.

The cost of construction for which permits were issued in Atlanta, Ga., for the month is estimated at \$277,000, a decrease of about \$125,000 as compared with the corresponding month last year. Operations were active in Savannah, the value of construction being estimated at \$96,520, including new buildings, alterations and repairs. In Columbus permits have been

issued since the first of the year for construction to cost \$102,600.

The cost of construction for which permits were issued in Tampa during February is estimated at \$75,385, of which \$57,895 was for new work. As compared with February, 1915, these figures show an increase of about \$23,000. Permits were issued in Miami for construction to cost \$61,250 and in Jacksonville \$27,275.

A total of 178 permits was issued in Memphis, Tenn., for construction to cost \$205,565. As compared with the corresponding month last year these figures show an increase of 33 in the number of permits and \$103,630 in the cost of construction.

Operations in Louisville, Ky., for the month showed a large gain as compared with February, 1915. A total of 171 permits was issued, representing a cost of construction of \$941,330, as against 159 permits in February, 1915, representing a cost of construction of \$319,520. Although building operations were not as active in Lexington during 1915 as in previous years, permits were issued for construction to cost \$439,175. Figures for February are not available.

The cost of construction for which permits were issued in Joplin, Mo., during the month was estimated at \$49,945. This is considered a better record than that of any previous February.

In Houston, Tex., a total of 67 permits were issued for permanent buildings, representing a cost of construction of \$295,022, and 167 permits for temporary improvements to cost \$43,136. These figures show large gains over operations for January. A total of 186 permits was issued in San Antonio, representing a cost of construction of \$95,990, as against 159 permits for January, representing a cost of construction of \$134,960. Permits were issued in Fort Worth to the number of 64, representing a cost of construction of \$109,595. As compared with February, 1915, these figures show an increase of \$73,970. The cost of construction for which permits were issued in Waco during the month was estimated at \$58,480, and in Beaumont at \$45,000.

Permits were issued in Oklahoma City for construction to cost \$62,580, an increase of about \$20,000 as compared with the corresponding month last year. All monthly building records in the history of Tulsa, it is announced, were broken, when permits were issued for \$735,330 worth of construction during February.

A total of 57 permits was issued in Little Rock, Ark., during the month for construction to cost \$67,061. Of this total, \$59,500 was expended for new buildings. In February, 1915, a total of 58 permits was issued, representing a cost of construction of \$37,095.

Attracting Industries Through Natural Gas.

Huntington, W. Va., March 7.—[Special.]—Among the recent activities of the Chamber of Commerce of Huntington has been the formation among its members of a natural gas development company that enables it to offer five-cent gas to manufacturers.

This has resulted in bringing to Huntington a number of new industries that were glad to accept a favorable manufacturing location, combined with a low power cost. These new industries include a window-glass company, glass bottle company, glass brick company, enameling company, and one for making interior hardwood trim.

In an adjoining manufacturing district two new companies have been financed and established by Huntington capital to produce, respectively, mine car wheels and bathroom fixtures. There is also a possibility of securing a large baking establishment and a packing-house, the latter to utilize a converted brewery.

In addition to this successful work in adding new industries to the city, the Chamber of Commerce has aroused in its work great interest on the part of its business men, and in 11 days in last month 281 new members were secured for the Chamber of Commerce, these bringing the grand total of membership up to 997.

Huntington's location on the Ohio River, its river and railroad transportation facilities for reaching markets in every direction, combined with the low cost of natural gas for industrial purposes, have stimulated the Chamber of Commerce in the successful efforts it has made to broaden the city's industrial activity.

C. P. Snow, cashier of the Huntington Banking & Trust Co., is president of the Chamber of Commerce, and H. E. Mathews secretary.

SPARTANBURG TO HAVE A NEW AND UP-TO-DATE HOTEL.



NEW HOTEL UNDER CONSTRUCTION AT SPARTANBURG, S. C.

At Spartanburg, S. C., the Spartanburg Hotel Corporation, J. W. Allen, president, has under construction a notable addition to the modern hostleries of that State. The building will be six stories high, of fire-proof construction, 174x66 feet, equipped with steam heat and electric lighting, and will cost, exclusive of equipment, \$184,000.

Plans and specifications were prepared by Charles M. Robinson, Inc., Richmond, and the general contract was awarded to Longest & Tessier Company, Greensboro, N. C. Subcontracts as follows have been awarded: Excavating, W. D. Pearson; lumber, C. K. Callahan; both of Spartanburg; terra-cotta, New Jersey Terra-Cotta Co.; gypsum partition blocks, Keystone

Fireproofing Co.; both of New York; structural steel, Virginia Bridge & Iron Co.; ornamental iron, Roanoke Bridge & Iron Co.; both of Roanoke, Va.; elevators, Otis Elevator Co., Atlanta, main office New York; terra-cotta partition blocks, Chattanooga (Tenn.) Sewer Pipe & Fire-Brick Co.; plastering, W. M. Long, Greensboro, N. C.; brick, Kingsport Brick Corporation, Johnson City, Tenn.; cement, Clinchfield Portland Cement Co., Kingsport, Tenn.; reinforcing steel, Southern Engineering Co., Charlotte, N. C.; plumbing, Acme Plumbing Co., Charlotte, N. C.; electrical work, Comstock Electric Co., High Point, N. C.

The illustration herewith presents a view of the building as it will appear when completed.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Bonds Voted.

Belton, Tex.—Bell county, Salado precinct, voted \$8000 bonds to construct roads.

Eastville, Va.—Northampton county, capeville magisterial district, will issue \$20,000 bonds for road construction.

Greenup, Ky.—Greenup county issued \$200,000 bonds to construct roads, etc.

Jacksboro, Tenn.—Campbell county issued \$8000 bonds for road construction.

Sapulpa, Okla.—Creek county, Lake township, voted \$10,000 bonds and Shannon township \$20,000 bonds to construct roads.

Bonds to Be Voted.

Beckley, W. Va.—Raleigh county votes April 1 on \$835,000 bonds for road construction in Town district, Trap Hill district, Shady Springs district and Slab Fork district.

Fairmont, W. Va.—Marion county, Paw-paw district, votes March 21 on \$360,000 bonds for road construction.

Falfurrias, Tex.—Brooks county votes March 25 on \$30,000 bonds to construct roads.

Henderson, Ky.—Henderson county votes April 20 on \$400,000 bonds to construct roads.

Kissimmee, Fla.—Osceola county, Third Commissioners' District, will vote in April on \$250,000 bonds for road construction.

Lake Providence, La.—East Carroll parish will vote on \$250,000 bonds to construct roads.

Madisonville, Tenn.—Monroe county votes \$325,000 bonds to macadamize about 80 miles of road.

Mansfield, La.—De Sota county will vote on \$280,000 bonds to construct roads.

Marion, Ky.—Crittenden county votes May 27 on \$200,000 bonds to construct roads.

Titusville, Fla.—Brevard county votes March 11 on \$150,000 bonds to construct roads.

Contracts Awarded.

Austin, Tex.—City awarded contract for 13,500 square yards paving and 1300 feet parking; \$36,000 available.

Baltimore, Md.—City awarded \$104,961.50 paving contract.

Brackettville, Tex.—Kenney county awarded \$27,000 contract for road construction, etc.

Jamestown, Tenn.—Fentress county awarded contract to construct 33½ miles of grading, etc.; \$150,000 available.

Kansas City, Mo.—City awarded contract to construct 10,000 square yards rock asphalt paving on concrete base; cost \$20,000.

Louisville, Ky.—City awarded \$46,441 paving contract.

Maynardville, Tenn.—Union county awarded \$82,000 contract to construct several roads.

Parkersburg, W. Va.—City awarded \$83,870.41 contracts for street paving.

Pecos, Tex.—Reeves county awarded \$38,201 contract to grade and gravel five roads, comprising 21 miles graveling and 40 miles grading.

Tazewell, Tenn.—Claiborne county awarded contract to macadamize 29 miles of road.

Virginia Beach, Va.—City let \$1800 contract to build sand-clay road.

Contracts to Be Awarded.

Baltimore, Md.—City receives bids until March 15 for 53,900 square yards sheet asphalt, 11,610 square yards vitrified block; 3430 square yards granite block paving and 3150 square yards granite block repaving.

Bay Minette, Ala.—Baldwin county receives bids until March 20 to grade and improve road; \$7000 available.

Birmingham, Ala.—City will lay asphalt and asphaltic concrete paving on several streets; estimated cost \$35,000.

Camden, Ala.—Wilcox county receives bids until April 3 to construct clay and sand or clay and gravel roads; estimated cost \$25,000.

College Park, Ga.—City receives contract until April 3 to construct 1500 square yards tile or cement walks.

Columbus, Miss.—Lowndes county will construct roads, having \$30,000 available.

Gulfport, Miss.—Harrison county will construct boulevard; 25 miles.

Jonesboro, Ark.—Craighead county receives bids until April 6 to construct 13 miles of asphalt road and three miles of gravel road.

Lafayette, Ga.—Walker county will construct 2.35 miles of mountain road.

Little Rock, Ark.—City receives bids until March 15 for street improvements; 40,000 cubic yards grading, 41,000 linear feet curbs and gutters; 55,000 square yards paving.

Maysville, Ky.—Mason county will spend \$82,000 for road construction.

Ransom, W. Va.—City will expend \$2000 to grade and macadamize streets.

Sebring, Fla.—City will construct 30,000 square yards of sand-asphalt paving and three miles of concrete or St. Petersburg, Fla.—City will pave 16 additional streets.

Tampa, Fla.—Hillsborough county will construct 8½ miles of road to cost \$56,000.

Tusculum, Ala.—City has \$60,000 available for street improvements.

granite curb; \$50,000 available.

West Asheville, N. C.—City receives bids until March 13 for 33,000 square yards of paving; considering brick, sheet asphalt, bitulithic and asphalt concrete.

Good Highways Essential to Highest Civilization and Best Mental and Material Advancement.

The American Highway Association in its campaign for good roads sends out an interesting story, from which the MANUFACTURERS RECORD takes the following:

There is a domestic and social side as well as a commercial and industrial side of the good-roads movement. For this reason it is necessary to enlist the active support of the women and children who dwell in the country districts especially in spreading the gospel of good roads. They know better than any others what bad roads mean.

The theorists and philosophers are always talking about the delights of country life and railing against the drift from the farms to the cities and wondering in a blind sort of way why it is that the men would not prefer the independence of what they call "God's out-of-doors," the quiet and peace remote from the fret and confusion and the artificialities and dehumanizing influences of crowded centers of population. These philosophers never lived amidst the solitudes of the country, far from human associations, without many, or any, of the influences of civilization, shut in or shut out from the world throbbing with life and excitement to other effort than that merely of digging a living out of the earth.

The commercial side of the problem has been fully discussed in all its bearings by eminent men who know how to mix cement, how to "negotiate" hills, what to do with forbidding swamps and exactly what traffic this, that or the other type of road would bear, and there is nothing more important; but this article is intended to deal with human and not the technical side of the road problem, with the hope that the women who live in the country districts may be persuaded to make their influence felt with the men who control in the political affairs of the land and who have made a mess of it if the highways are to be regarded as proof of their fitness to rule.

It was largely with this object in view that Dr. T. N. Carver of Harvard University was engaged by Secretary Houston of the United States Department of Agriculture to make a study of the conditions relating to country life, so that many of its hardships might be removed and its vital aspects so changed that men would seek the freedom of the farm rather than the artificial excitements of the town. In a well-considered report on "The Organization of a Rural Community," Dr. Carver insisted upon organization of each community to deal with its principal needs, of which there are ten in the average rural community in the United States. Five of these needs are included under the description of "business needs" and five under the description of "social needs." Under the former classification

are better farm production, better marketing facilities, better means of securing farm supplies, better credit facilities, better means of communication by the building of roads and telephones, and under the social needs are enumerated better educational facilities, better sanitation, better opportunities for recreation, the beautification of the country side and better home economics. These needs are to be supplied by community action, and it will be observed that however varied the activities the whole fabric is based at last upon the means of communication; that is to say, upon the building and maintenance of the public highways. For how can there be better marketing facilities, or better means of securing farm supplies, or better educational facilities, or better opportunities for recreation without better roads, and what would better farm production profit if there were not better roads to market?

To make rural life comfortable there must be rural organization. Men will not stay on the farm if the farm is not made attractive. Women will starve for the things that make life worth living—good schools for their children, community centers for recreation, well-built houses with sanitary conveniences, well-constructed roads passable at all seasons of the year, so that they may freely enjoy the companionship of their neighbors, and the rest of the things they lack to make their lot contented. "As the characteristic evils of urban life grow out of congestion," as Dr. Carver expresses it, "so do the characteristic evils of rural life grow out of isolation. Except for a few rare souls, isolation means stagnation."

All the conditions of rural life can be immensely improved by the organization of rural communities in their own interest, and the first step toward the improvement of these conditions is the building of good roads. Good roads mean better schools, better neighbors, better churches, better houses to live in, closer touch with the outside world, easier ways to market, a thousand new centers of social activities where there is none now, and the return to the free and independent life of the farm of hundreds of thousands who have sought refuge from the hardships of rural life in towns and cities where men live together, however far apart, in sentiment and aspiration.

How can the women help the good-roads movement? In many ways. If bonds are to be voted for the building of roads, by making the question a domestic matter. If additional taxes are required, by presenting to the members of the family who vote the question as it affects the wife and children. If there are roads to be dragged or graded by community action, by taking care that the men and boys put in a full day's work; by making common cause with all organizations working for the improvement of the highways for the benefit especially of those who live in the country.

\$185,000 for Louisiana Roads.

Proposed road construction in Louisiana is outlined by J. A. Lovell, highway engineer, Road District No. 1, parish of Lafourche, Raceland, La., who writes to the MANUFACTURERS RECORD:

"There has been organized two road districts, Nos. 1 and 2. No. 1 has voted \$105,000 bonds and No. 2 \$80,000 bonds. The location of the proposed road in district No. 1 is along the left bank of Bayou Lafourche from Lockport up the said bayou for a distance of 10 miles, and from Raceland along the lower side of the Southern Pacific Railroad to Bayou Des Allemands, a distance of 10 miles. The location of the road in district No. 2 is along the left bank of Bayou Lafourche from the parish line between the parishes of Assumption and Lafourche, down said bayou a distance of 20 miles. The bonds voted have been sold, but as the money is not available at once we do not expect to make any contracts before spring or summer.

"About five miles of the road in district No. 1 was through a low swamp, where some dredge work was necessary in order to throw up an embankment of a sufficient height that the finished road would be above high water. This dredging work has been completed at a cost of \$20,000. We have made application to the State for assistance on that part of the road from Raceland to Des Allemands, and it is probable that the construction of these 10 miles will be carried on under State supervision. As soon as our funds are available we expect to make survey, prepare plans and specifications and let contracts for this work."

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

\$7,500,000 FOR IMPROVEMENTS.

Southern Pacific Will Spend \$5,500,000 and "Iron Mountain" Line \$2,000,000.

Announcement that the Southern Pacific Railway lines in Texas and Louisiana will spend a total of nearly \$5,500,000 this year for equipment and other improvements has been made at Houston by W. B. Scott, president, according to a report from there.

There will be \$2,038,000 to buy cars and engines, \$2,066,000 for new and heavier rails and \$1,218,000 for other betterments. The equipment will include 20 Mikado locomotives, 300 box cars, 100 automobile cars, 250 stock cars, 125 flat cars, 250 flat car bodies, 10 steel baggage cars, 12 steel baggage and mail cars, 15 steel passenger cars, 1 locomotive crane, 1 steel car float and a self-propelling piledriver. The steel will amount to nearly 40,000 tons of 90-pound rails.

The rails removed from main line to make way for the 90-pound steel weigh from 75 to 80 pounds per yard, and they will be placed in the tracks of branch lines, replacing rails of lighter type and affording a better permanent way for the heavier motive power now used.

President Scott is reported as saying with reference to the improvements: "Our policy is and has always been one of progress. A railway, to be efficient, cannot remain idle either in operation or development. Bad years cannot remain always, and we must prepare for the good ones. We have made steady progress in spite of heavy financial losses from causes over which we had no control, and, if we can escape any further visitations, man-made or put into effect by Providence, we hope to so rebuild the Southern Pacific lines here and elsewhere as to make them equal to all possible demands."

The company has ordered much if, not all, of the equipment, and it has also placed orders for the rails. The miscellaneous work contemplated includes some new steel bridges, ballasting of tracks, additional side-tracks and spurs, improvements to shop buildings, machinery and tools, station buildings, water and fuel stations, and also some improvements to existing equipment.

The St. Louis, Iron Mountain & Southern Railroad of the Missouri Pacific system will make improvements in Arkansas this year at a cost of about \$2,000,000. Alexander Robertson, vice-president, is quoted at Little Rock as saying that the work to be done will include ballasting, laying of new rails, construction of sidings, improvements to rolling stock, etc. The expenditures outlined are over and above the cost of repairing damages done by the recent floods, which will be about \$1,000,000 more. The floods revealed the need of raising tracks in some places, and the cost of doing this will be covered in the flood damage bills. Within two weeks it is expected that all the damaged tracks will be again open to service. Work on the Marietta cutoff has begun.

To Relieve Car Shortage.

The committee on car service of the American Railway Association, of which Fairfax Harrison, president of the Southern Railway, is chairman, has made recommendations to the Interstate Commerce Commission looking for relief of the car shortage on Western railroads. It is proposed that Eastern railroads endeavor to return box cars West at least 20 per cent. in excess of the number received from the West, and that Western railroads discourage the loading to Atlantic seaboard and New England points of commodities which cannot be readily unloaded and promptly disposed of; also that shippers in the East refrain from ordering freight in excess of their ability to promptly unload it. The Commission is urged to consider requests for increased demurrage and storage charges to further ameliorate conditions.

Foreign Trade for the South.

The South American Agency of the Southern Railway Co., 322 James Building, Chattanooga, Tenn., is to be made a co-operative branch of the United States Department of Commerce, so that manufacturers in the Southern States will be afforded additional opportunities to acquaint themselves with the demand throughout the world for goods made in this country. In connection with this announcement it is remarked that there are now, as never before, chances for the permanent up-building of commerce between the Latin-American countries, Russia, South Africa and China and the South.

Powerful Engines for a Southern Line.

With the delivery of the three Mallet compound engines recently purchased by the Nashville, Chattanooga & St. Louis Railway for use in operating heavy freight trains over the mountain on the Chattanooga division, near Cowan, that road will have in operation what are said to be the heaviest locomotives in the South.

These engines each have a tractive force of 90,000 pounds. The total weight of engine and tender is 620,000 pounds, or 310 tons, and each engine has 16 drivers, eight cylinders, and weighs, exclusive of the tender, 470,000 pounds. These mammoth locomotives are about the size of two ordinarily large engines, and are known as the most powerful type of locomotive.

Within the past year the Nashville, Chattanooga & St. Louis has increased its locomotive equipment by the addition of several new Mikado type freight engines and Pacific type passenger locomotives, these engines being rated among the most powerful of their type. In other words, the management is endeavoring to furnish the shippers and the traveling public the best service possible, and the powerful Mallets soon to be delivered are but another evidence that the road is keeping up with the latest ideas in railroading.

The road is also building 1000 steel underframe box cars at its shops here, and has added between 100 and 150 men to its shop forces in order to facilitate this work. The cars are being completed at the rate of 10 a day, and as a result of this work the road is putting in circulation in the various trade channels between \$8000 and \$10,000 a month above its usual shop payroll.

Deal or Trackage Agreement?

A trip of officials of the Baltimore & Ohio Railroad over the Coal & Coke Railway to Charleston, W. Va., has given rise to a surmise that a purchase is contemplated by the Baltimore & Ohio to give it a through route from Pittsburgh via Grafton to Charleston. The two roads meet at Sago, south of Buckhannon, but it is said that a short connection might be built from Hampton to get a better route. Another connection with the Coal & Coke is also made on the Baltimore & Ohio line south from Fairmont and Clarksburg, this meeting point being Orlando, W. Va., which is west of Sago. A report from Grafton says that plans and estimates have already been made for a four-mile connection via Hampton. This, it is stated, would shorten the route and avoid some heavy grades.

Another report from Charleston says it is believed there that the trip of the Baltimore & Ohio officials was made to obtain a better understanding between the traffic and the transportation departments of the two roads. This, taken in consideration with the statement made at the headquarters of the Baltimore & Ohio Railroad, that nothing had been heard there of a deal for the Coal & Coke Railway, indicates that possibly a new traffic arrangement is proposed or may be a trackage agreement for improved freight and passenger service.

A Railroad Out of Receivership.

The Federal Court at New Orleans last week ordered the receiver of the New Orleans, Texas & Mexico Railroad, J. D. O'Keefe, to surrender the title of the road to W. F. Taylor and Carl De Gersdorff of the reorganization committee of bondholders, who bought the property at the sale in November last for \$6,000,000, the litigation over it having terminated. A temporary reorganization of the company has now been effected with Y. Vandenberg of New York as chairman of the board; J. S. Pyrant of Houston, Tex., president; G. H. Walker of St. Louis, vice-president; Geneser Dufour of New Orleans, secretary, and J. H. Lauderdale of New Orleans, treasurer and assistant secretary. Headquarters will be at Houston. The capitalization of the new company will be \$15,000,000.

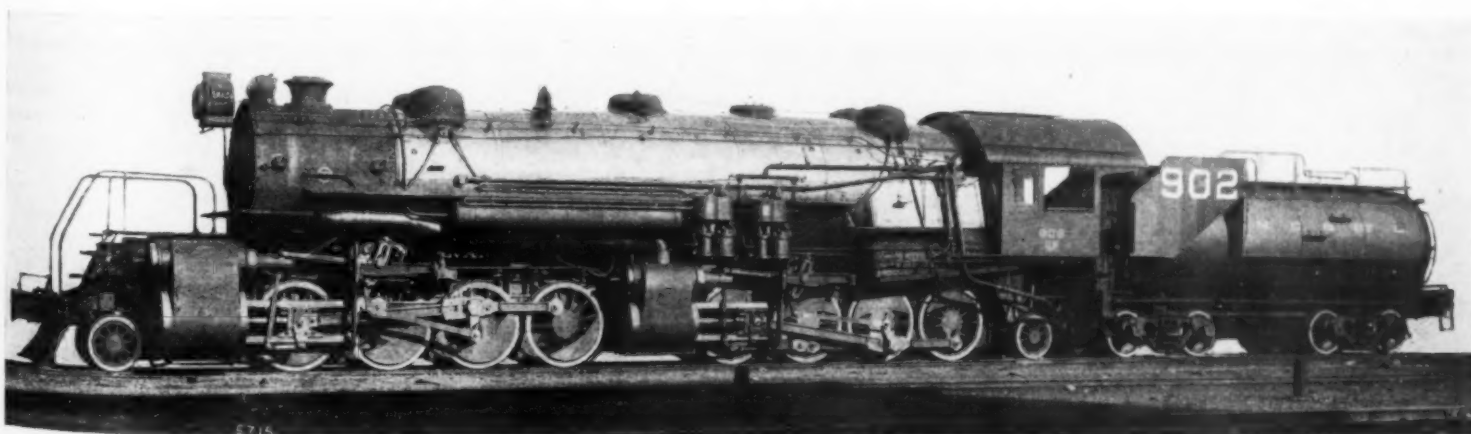
A report from Houston says that S. S. Butler, traffic manager, has resigned to take a position with the Frisco system, of which the New Orleans, Texas & Mexico was formerly a part.

Recent Railway Reports.

The Atlantic Coast Line reports for January total operating revenues \$3,075,065.44, increase as compared with the same month of 1915, \$431,863.98; operating expenses and taxes \$2,137,212.73, increase \$168,321.96; operating income \$937,852.71, increase \$263,542.02.

The company also reports for the first seven months of the current fiscal year, which began July 1, 1915, as follows: Total operating revenues \$18,483,050.28, increase as compared with the corresponding period of last year \$832,351.13; operating expenses and taxes \$13,949,755.97, decrease \$593,658.23; operating income \$4,533,291.31, increase \$1,426,009.56.

The Western Maryland Railway reports for January total revenue \$893,550.91, increase as compared with January, 1915, \$236,702.38; total expenses and taxes



ONE OF THE NEW MALLET COMPOUND LOCOMOTIVES FOR THE NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY.

\$631,004.12, increase \$94,621; operating income \$262,546.79, increase \$142,081.38.

For the seven months of the fiscal year, from July 1, total revenue \$6,298,888.83, increase \$1,441,843.55; total expenses and taxes \$4,297,505.67, increase \$505,566.36; operating income \$2,001,383.16, increase \$936,277.19.

The Central of Georgia Railway reports for January operating revenues \$1,024,147.15, increase as compared with the same month of last year \$21,117.42; operating expenses \$753,489.89, increase \$20,007.39; net operating revenues \$270,657.26, increase \$1110.03; operating income \$216,300.22, decrease \$1947.07.

The Nashville, Chattanooga & St. Louis Railway statement for January shows operating revenue \$1,053,222, increase as compared with January of last year \$206,326; operating expenses \$783,085, increase \$45,526; net operating revenue \$270,136, increase \$160,799; operating income after taxes and uncollectible revenue \$243,945, increase \$162,127; taxes decreased \$1213.

For the seven months of the fiscal year since July 1 the operating revenues were \$7,321,433, increase as compared with the corresponding period of last year \$809,636; operating expenses \$5,424,695, decrease \$57,972; net operating revenue \$1,943,710, increase \$856,607; operating income after taxes and uncollectible revenue \$1,760,341, increase \$864,440.

TWO "COAST LINE" EXTENSIONS.

Sebring to Immokalee and Perry to Monticello Will Be Built in Florida.

A special dispatch to the MANUFACTURERS RECORD says that President J. R. Kenly of the Atlantic Coast Line while at Tampa, Fla., is quoted as saying that the company's projected line from Sebring to Immokalee, Fla., 75 miles, is expected to be completed within 18 months; also that some time the company will extend its west coast system through Perry and Monticello, Fla., to Thomasville, Ga. Furthermore, the road has ordered 20,000 tons of 85-pound rails, much of which will be used on its Florida lines.

The extension from Sebring to Immokalee will be a continuation of the Haines City branch directly southward into the heart of Lee county, the route being about 20 miles west of Lake Okechobee and the proposed southern end of it about 15 miles farther south than the southern end of the lake. It will bisect a region which promises rapid and excellent development, and considerable activity is expected there as soon as construction is undertaken. The location survey has begun and is believed to be well advanced, so that the actual work of building the road may be started very soon.

As for the contemplated extension of the west coast line, it would require about 35 miles of new construction to build the necessary link to connect Perry with Monticello and thus establish a through route. The link from Dunnellon to Wilcox, Fla., 51 miles, was finished in 1914.

Southern Railway's Earnings.

The Southern Railway Co. reports through Comptroller A. H. Plant:

Gross revenue January, 1916, \$5,588,021, increase as compared with January, 1915, \$935,019, or 20.10 per cent., and a decrease as compared with January, 1914, of \$150,948, or 2.63 per cent.

Operating expenses, taxes and uncollectible railway revenues January, 1916, \$4,077,303, increase as compared with 1915, \$131,025, or 3.32 per cent., and a decrease as compared with 1914 of \$601,887, or 12.86 per cent.

Corresponding results for the seven months since July 1 are as follows:

Gross revenue this year \$39,964,815, increase as compared with the same period of last year \$2,546,236, or 6.85 per cent., and a decrease as compared with 1914 of \$2,756,193, or 6.45 per cent.

Operating expenses, taxes and uncollectible railway revenues this year \$28,194,706, decrease as compared with last year \$1,573,368, or 5.29 per cent., and as compared with 1914 of \$3,357,517, or 10.64 per cent.

NEW EQUIPMENT, ETC.

Southern Railway and Louisville & Nashville Place Large Rail Orders.

Illinois Central Railroad is reported in the market for 600 freight cars, of which 300 will be stock cars.

Sloss-Sheffield Steel & Iron Co., Birmingham, has ordered 7 switching locomotives from the Baldwin Works, Philadelphia.

City Light & Traction Co., Sedalia, Mo., is reported to have ordered 7 street cars from the American Car Co., St. Louis.

Buffalo Creek & Gauley Railroad will buy 3 switching engines.

Coal & Coke Railway has ordered 2 consolidation locomotives from Baldwin's.

Southern Railway has ordered 30,000 tons of rails from the Tennessee Coal, Iron & Railroad Co.

Louisville & Nashville Railroad has ordered 47,000 tons of rails from the same company for delivery next year.

St. Louis & San Francisco Railroad is reported in the market for 700,000 tieplates.

Railroad Notes.

The Valley Tie & Timber Co. of Staunton, Va., has shipped via steamer out of Norfolk 75,000 cross-ties for the Paris-Orleans Railroad of France.

The Southern Railway Co. reports that during the year 1915 there were 146 trespassers killed on its tracks, of whom 93 were walking on the track and 35 were stealing rides on trains. An examination of all the facts in connection with these fatalities shows that the great majority of the persons killed were useful citizens.

Rev. Charles L. Bass has been appointed "welfare agent" of the Southern Railway, with headquarters at Atlanta.

B. L. Bugg, assistant general manager of the Atlanta, Birmingham & Atlantic Railroad, has been appointed general manager of the line, according to an announcement made last week in Atlanta. The position of general manager was formerly held by E. T. Lamb. In connection with the office of president, which he still occupies. Mr. Bugg was formerly traffic manager of the Norfolk Southern Railroad.

A report from Asheville, N. C., says that Frank Buell, president of the Graham County Lumber Co., announces that the Andrews Lumber Co.'s railroad, which is owned and operated by his company, will soon be operated as a common carrier, and it will be extended to the head of the Nantahala River, making it about 30 miles long. Gasoline passenger cars are to be used. The line will be of standard gauge.

TEXTILES

American Cotton Manufacturers' Association.

The fourteenth annual convention of the American Cotton Manufacturers' Association, C. B. Bryant, secretary and treasurer, Charlotte, N. C., will be held at Atlanta, Ga., on April 4 and 5. Official notice to this effect is now being distributed, and the usual large attendance is anticipated. Well-known textile manufacturers of the South and of New England will, as usual, discuss various subjects of interest to owners of cotton mills and others concerned with the progress of the textile industry. Scott Maxwell, Cordova, Ala., is the association's president; John A. Law of Spartanburg, S. C., vice-president, and Cesar Cone, Greensboro, N. C., is chairman of the board of governors.

Icard Manufacturing Co.

Two hundred dozen pairs of hose will be the daily capacity of the Icard (N. C.) Manufacturing Co., organized with a capital stock of \$15,000. This company will build a 200x50-foot mill and install machinery costing \$7000, including steam power with belt drive, 40 operatives to be employed. Its equipment will include 40 knitting machines, 5 loopers, 4 ribbers, 2 sewing machines, etc., all of which have been purchased.

This plant is the enterprise recently mentioned as proposed by W. Y. Frazier and D. B. Mull of Connelly Springs, N. C. Mr. Mull is president-treasurer and Mr. Frazier is secretary.

Cerro Gordo Hosiery Mill.

The Cerro Gordo (N. C.) Hosiery Mills Co. will be organized by J. H. Williamson, president of the Cerro Gordo Warehouse Co. (lately noted planning a knitting mill), D. G. Nance and associates. A capital of \$10,000 has been named, a 150x70-foot brick building has been secured and an equipment of 30 hosiery knitters, with accompanying machinery, will be installed, including steam or oil power plant. Mr. Williamson is prepared to consider data and prices on the machinery.

Star Hosiery Mills.

Contract for the buildings of the Star Hosiery Mills (recently detailed) of Spartanburg, S. C., has been awarded to the J. E. Gallivan Building Co., Greenville, S. C. A two-story 120x50-foot mill, with boiler and dye-house, will be erected, the daily capacity to be 100 dozen pairs of hose. The machinery for this \$100,000 company will include 150 knitters. J. E. Sirrine, Greenville, S. C., is the architect and engineer in charge.

Palmetto Products Co.

The Palmetto Products Co., Jacksonville, Fla., recently mentioned as incorporated with \$1,000,000 to establish plants previously detailed, has located its initial weaving mill in a large industrial building. Later it will locate shredding plants in various sections of the State, erecting suitable buildings for the purpose. This company builds its own special machinery.

To Knit Underwear.

A knitting mill for underwear will be established at Waynesboro, Va., by L. Mehler and associates. They have secured a building, and will install 10 knitting machines with accompanying equipment, data and prices being invited.

\$100,000 Knitting Enterprise.

Capitalized at \$100,000, the Norfolk (Va.) Hosiery & Underwear Mills Co. has been incorporated. The officers are as follows: Joseph B. Hecht, president; C. J. Dey, vice-president; Morton Hecht, secretary-treasurer.

Cotton Linters Plant.

Bleached cotton linters equipment may be installed by the Farmers' Cotton Oil & Trading Co., Uniontown, Ala. Data and prices on the necessary machinery are wanted by the company, J. F. Glass, general manager.

Textile Notes.

Durham (N. C.) Hosiery Mills contemplate building finishing-room for No. 5 mill at Goldsboro, N. C.

Clement M. Egner, Elkton, Md., and associates have incorporated the Eagle Knitting Mills, with \$3000 capital.

A 150x138-foot addition, of brick construction, will be erected by the Kesler Manufacturing Co., Salisbury, N. C.

An investment of \$5000 for a knitting plant has been decided upon by the Free Will Baptist Mission, G. C. Morris, manager, Fort Worth, Tex.

Fiber products will be manufactured by the Tupelo (Miss.) Fiber Co., which has been incorporated with \$50,000 capital by J. E. Knox, A. C. Beane and others.

Mt. Vernon-Woodberry Mills, Baltimore, has completed its first annual report, showing a net profit of \$402,578.39 for the six months ending December 31. This is the first income statement of the company since it was reorganized after the bondholders' committee took it over from the previous corporation. Howard Baetjer has been elected vice-president and is in charge until the selection of a president, this office being temporarily vacant. H. L. Smith was elected secretary and treasurer.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Gyratory Foundry Riddle.

To cut the cost of labor, the largest item in the making of castings, is the purpose of a new gyratory foundry riddle, manufactured by the Great Western Manufacturing Co., Leavenworth, Kans., and operated by a Westinghouse totally enclosed one-sixth-horse-power vertical motor made especially for use in this device, and run by the ordinary lighting current from lamp socket. The motion of the riddle is obtained by the inertia effect of an unbalanced fly-wheel, which causes every part to gyrate. This motion is said to be unusually well adapted to sifting sand, since the energy is practically all utilized rather than wasted in throwing the material against the ends of the compartment. The motion of the sand or other material is said to be circular, so that the small particles reach the sieve in the shortest possible time and the sifting takes place with marked rapidity. It is claimed that one operation mixes as well as sifts, eliminating one turning of the material to be sifted and mixed. Thus not only the time of making the mold is reduced, but a better mold is insured after drawing the pattern.

The outfit complete weighs about 90 pounds, so that it can be moved easily. It is particularly adapted to use suspended from a trolley running on a cable stretched parallel with the line of molders in the foundry. The design eliminates obstructions to the shovel, and as the device is supported from above, a wheelbarrow may be run underneath for receiving. The sieve is 20 inches in diameter, and with this size is claimed will do the work of 10 men sifting by hand. As the sieve does not have to be connected to the motor by connecting rods, etc., it can be easily and quickly removed from the clamping device for



ELECTRICALLY OPERATED FOUNDRY RIDDLE.

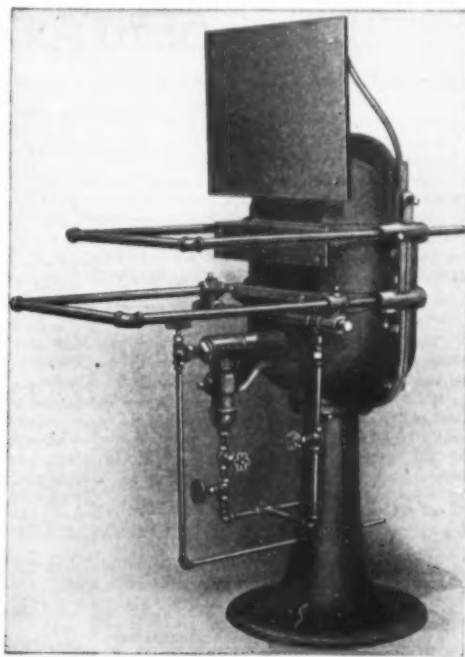
upper one for preheating. It is claimed that by the addition of the preheating feature the space for heating is doubled, the heating capacity of the furnace is increased about 50 per cent, and the efficiency of the furnace is increased correspondingly.

The type burner now furnished with this furnace is designed for use with either high or low pressure air. It has merely to be throttled for high pressure, and

Preheater for Oil Furnace.

The No. 3 Leyner oil-burning furnace, manufactured by the Ingersoll-Rand Company, 11 Broadway, New York City, which is used for heating drill steel, is now made with a preheating chamber which is claimed to greatly increase the capacity of the furnace. This preheater is a section which fits between the body and cover of the furnace of the old design, easily attached to an old furnace by changing a few bolts. Referring to the illustration herewith, it will be seen that the lower chamber is used for the final heating and the

when this is done it is as efficient as burners designed especially for high pressures and eliminates the usual noise, the manufacturer claims. Petroleum or any of its oils,



LEYNER OIL FURNACE PREHEATING CHAMBER.

such as gasoline, kerosene, distillate, etc., may be used. The statement is made that with oil-heating the steel cannot be injured by absorbing harmful elements, such as sulphur, phosphorus or other impurities, nor form unequal heating, as the steel is heated in a flame which imparts a uniform temperature. The steel is in full view of the operator at all times. Another advantage of oil as fuel is the absence of smoke, soot, dust, ashes and cinders, a great convenience which is particularly appreciated in underground mine installations and inside buildings.

Rumored that du Pont Company Will Build Another Great Plant.

Richmond, Va., March 1.—[Special.]—It is reported that another great munition plant is to be erected in Virginia adjacent to Richmond. Apparently well-authenticated rumors are to the effect that E. I. du Pont de Nemours & Co. will establish another giant plant in this section that will be a rival to the city of Hopewell, that has sprung up around City Point, where the great powder company now has an immense plant employing about 20,000 men, with a payroll of more than \$1,500,000 a month.

The new plant of E. I. du Pont de Nemours & Co. as reported is to be located on the York River near the city of Williamsburg, about 40 miles from Richmond. A new railroad will be built from Williamsburg to the proposed plant, a distance of about eight miles. The Chesapeake & Ohio Railway passes through Williamsburg, so that the plant would have a deep-water wharf, with the double advantage of water and rail transportation. The York River is about 60 feet deep at this point.

There have been a number of rumors regarding the establishment of a great steel plant near Richmond, and West Point has been mentioned as a possible site. It is said the company would want deep-water advantages, which could be obtained at West Point. If the steel plant were erected there it would be in close proximity to the proposed munition plant. It is said a great deal of business could be transacted between the two companies.

[The E. I. du Pont de Nemours & Co. wire MANUFACTURERS RECORD: "Nothing definite about Williamsburg plant. Too immature to discuss."—Editor MANUFACTURERS RECORD.]

Prepared Humus in Florida.

One hundred tons of prepared humus will be the daily capacity of the Florida Peat Products Co., recently incorporated at Ocala, Fla., with \$100,000 capital. The plant will be built at Meadows, Fla., and its cost will be \$75,000. Robert A. Alfred of Ocala is vice-president and manager.

Emerson Pumps at Panama.

It is generally accepted that the most efficient machinery obtainable has been utilized in the Government's great work of constructing the Panama Canal. Frequent descriptions and many photographic views have made the canal a familiar subject, and it is of interest to mention that among the mechanical equipments of Southern production adopted for pumping at the great waterway is the Emerson steam pump, manufactured by the Emerson Pump & Valve Co. of Alexandria, Va. An accompanying illustration represents an Emerson pump operating on the canal. This pump is working in a caisson which extends 120 feet below sea level, the caisson being emptied by lowering pumps to the bottom as the water recedes. This is one of 64 Emerson standard pumps used by the canal officials. The simple method of installation, with discharge pipe of ordinary fire hose, is indicated in the view.

Emerson pumps are manufactured in six sizes, and their manufacturer claims that their most notable features are efficiency and durability. They are described in detail, accompanied by many photographic views, in the company's literature.



EMERSON PUMP ON THE PANAMA CANAL.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Rockford.—Coosa county will construct steel bridge across Hatchett Creek near mouth of Weogufka Creek; County Comms. receive bids until Mch. 22; Lofton Thomas, Judge of Probate. (See Machinery Wanted—Bridge Construction.)

Ga., Calo.—Grady county, B. M. Johnson, Clerk County Comms., will construct steel bridge; cost \$3000.

Ky., Hopkinsville.—Christian county will vote Mch. 19 on bonds; if election carries, will let contracts within 30 days to build 4 or 5 bridges; cost \$50,000. (See Roads and Streets.)

Ky., Greenup.—Greenup county, A. J. Cochran, Clerk, issued \$200,000 bonds to construct roads and bridges.

Ky., Morganfield.—Dennis O'Nan Public Ditch Drainage Comms. and Union county will construct 7 steel highway bridges noted in Jan.; receive bids until Mch. 21; Norman R. Orcutt, Ch. Engr. Drainage Commission. (See Machinery Wanted—Bridge Construction.)

Miss., Flora.—Madison County Supvs., Canton, Miss., and Yazoo County Supvs., Yazoo City, Miss., contemplate constructing steel bridge across Big Black River at Scott's Ferry near Flora.

Mo., Rockport.—Atchison County Court will construct 50-ft. steel span, set on steel piling, known as Mill Creek Bridge; 50-ft. steel span, set on steel piling, known as High Bank Bridge; 40-ft. steel span, set on steel piling, known as "Dock" Van Meter Bridge; also construct grading requiring removal of 40,000 cu. yds. earth; remove 120-ft. steel span from John Hunter Road to new road, ¾ mi. north of Tarkio, Mo., and furnish set of steel tubes for same; bids opened Mch. 8; J. A. Krusor, County Highway Engr.

Tenn., Clarksville.—Montgomery county contemplates construction 2 bridges across Cumberland River at cost \$400,000; bonds proposed. Address John B. Osborne, Chmn. Committee, Clarksville.

Tenn., Harriman.—Roane county contract for construction 800 ft. concrete bridge across Emory River was let to Lutten Bridge Co., G. S. Daugherty, Pres., Knoxville, Tenn. (Letting of contract lately incorrectly noted.)

Tex., Bastrop.—Bastrop County Comms. receive bids until Mch. 15 to erect low-water concrete bridge or high-water bridge over Colorado River at Nash's Ferry, 9 mi. above Bastrop; also receive bids to grade and complete roads in Bastrop precinct and build 2 bridges over Cedar and Splice creeks. (Lately noted.)

Tex., San Angelo.—Tom Green County Comms. will construct causeway across Spring Creek; cost \$1500.

Va., Hanover.—Hanover County Supvs. let contract to W. E. Carter, Room 200 Park Bldg., Richmond, Va., to construct reinforced concrete bridge across Little River, 3 mi. from Beaver Dam; cost about \$3500. (Noted in December.)

Va., Staunton.—Augusta county will construct superstructure of 5 steel bridges; County Supvs. receive bids until Mch. 23; R. W. Moore, Supt. of Roads, Rooms 3 and 4, New County Bldg. (See Machinery Wanted—Bridge Construction.)

CANNING AND PACKING PLANTS

Ga., Statesboro.—Bullock Packing Co., capital \$150,000, organized by Brooks Simmons, Glenn Bland, J. A. Brannen, S. F. Oliff and others; establish packing plant. (Mr. Simmons lately noted interested in establishing packing plant.)

Miss., Meridian.—American Pickling & Canning Co., Wiggins, Miss., is considering establishment of branch plant.

Mo., Van Buren.—R. J. Mann, Secy. Commercial Club, is promoting establishment of cannery and ice factory.

Okla., Bartlesville.—Larkin Packer Co. will erect building; 2 stories; fireproof; brick and concrete.

Okla., Enid.—Enid Meat Packing Co., capital \$15,000, inceptd. by J. E. Bridges, H. L. Reid and R. F. Randolph.

Va., Urbanna.—Dixie Pickling Co., 3237 Arlington St., Philadelphia, let contract E. S. Mulre, Urbanna, to erect buildings for late-noted branch plant; frame 50x200-ft. structure; cost \$6000; plans by Max Borton.) 1 Arlington St., Philadelphia; will install cucumber-sorting machinery, gas engines, belting, tanks, barrels, salt and spices; manufacture pickles; capacity 3000 to 5000 bbls. per season. (See Machinery Wanted—Roofing; Salt; Barrels.)

Va., Richmond.—Providence Forge Packing Corp. increased capital from \$10,000 to \$50,000.

CLAYWORKING PLANTS

Va., Richmond.—Bricks.—New Era Brick Co., capital \$80,000, inceptd.; Ford M. Booth, Pres., Richmond; Jas. E. Cuthbert, Secy.-Treas., Petersburg, Va.

COAL MINES AND COKE OVENS

Ala., Birmingham.—Walmore Coal Co., capital \$2000, inceptd. by J. M. Donaldson, Mrs. Kate Donaldson and Fred G. Moore.

Ala., Coalburg.—Sloss-Sheffield Steel & Iron Co., Birmingham, will rehabilitate old beehive ovens and by-product coke ovens; begin operations within 30 to 60 days; repair 60 to 110 coke ovens in 2 batteries; plans daily output not less than 200 tons coke; estimated cost of improvements, including coke-pushing machine, \$15,000 to \$30,000.

Ala., Russellville.—Alabama Fuel & Iron Co., Birmingham, Ala., let contract to Concrete-Steel Construction Co., 606 Chamber of Commerce, Birmingham, for reinforced concrete building. (See Mining.)

Mo., St. Louis.—All Burn Fuel Co., capital \$50,000, inceptd. by Chas. P. Johnson, John W. Muller, Frank G. Helgott and others.

Tex., Dallas.—Dow Coal & Coke Co., capital \$21,000, inceptd. by W. E. Beaty, Bryan T. Barry and L. E. Burgess.

Va., Radford.—Winefrede Coal & Coke Co. (lately described under West Virginia) organized to succeed Southwestern Stone & Lime Co., stone business of latter company having been taken over by Chas. A. Klotz Co., Chicago.

Va., Roanoke.—Hazard Coal Corp., capital \$600,000, chartered; W. J. Brown, Pres., Bristol, Va.; J. B. Fishburne, V.-P.; D. D. Hull, Jr., Treas.; Leon Neal, Secy.; all of Roanoke.

W. Va., Beckley.—Tolbert Smokeless Coal Co., capital \$50,000, inceptd. by B. Elliott Tolbert, Joe L. Smith, W. Hume and others.

COTTON COMPRESSES AND GINS

Ga., Atlanta.—McDonough Compress Co., lately noted inceptd., capital \$500,000, will locate plants to compress hay. (See Miscellaneous Enterprises.)

Tex., Bardwell.—Bartlett & Maveety, B. F. Maveety, Mgr., will erect gin plant; cost \$10,000; open bids May 1 to construct sheet-iron building; 4 80-stand gin.

Tex., Denton.—Taylor Bros. will rebuild gin lately noted burned at loss of \$7000.

DRAINAGE SYSTEMS

Ark., Newport.—Bayou De View Drainage Dist. No. 1 let contract Northern Construction Co., Elkhart, Ind., to construct 7 drainage canals; 16-mi. main ditch; one 12-mi. and one 4-mi. laterals; 3 mi. small laterals; require 2,000,000 cu. yds. excavation; drain 46,730 acres for agriculture. (Lately noted.)

Ark., Powhatan.—War Pond Flat Creek Drainage Dist. let contract T. D. Hunt, Corning, Ark., to excavate 8 mi. drainage canals; require 140,000 cu. yds. excavation.

Ky., Calhoun.—McLean County Drainage Comms., S. B. Robertson, Secy., ordered survey, plans and specifications of W. A. Thomas Drainage Dist. made and filed with McLean County Court for next session; 1000 acres swamp land; E. T. Hart, Engr., Calhoun, Ky. (Lately noted.)

La., Crowley.—Acadia parish, Fourth Ward, will vote on tax of \$100,000 to construct series of canals land north and northwest of Crowley. Address Police Jury.

La., Crowley.—Arcadia parish, Prairie Hayes Dist., will have preliminary surveys made for drainage system to reclaim 40,000 acres swamp land in Southwest Louisiana; main canal to be about 12 mi. long, with numerous shorter canals and laterals; main canals to have outlet in Bayou Blackman; will vote on special drainage tax of \$100,000; John M. Marsh, Pres., Parish Police Jury.

La., Gueydan.—Gueydan Drainage Dist. voted \$234,000 bonds to construct drainage system for 70,000 acres. Address Drainage Comms. (Lately noted.)

S. C., Holly Hill.—Rum Neck Drainage Dist. Comms. (M. L. Breland, Dr. S. P. Wells, M. E. Shuler) will construct canal about 4 mi. long, 3 to 10 ft. bottom width, 2

ft. 2 in. to 4 ft. deep; will let contract Mch. 25; on account of legal technicalities bids for this work, noted in June, 1915, were deferred. (See Machinery Wanted—Drainage System.)

ELECTRIC PLANTS

Ala., Birmingham.—Southern States Electric Co., capital \$12,000, inceptd.; W. E. Mitchell, Pres.; V. H. Hanson, V.-P.; F. W. Hansman, Secy.-Treas.

Ala., Fayette.—Sipsey Valley Oil & Fertilizer Co., Thos. H. Robertson, owner, will install electric-light and ice plant; machinery cost about \$12,000; erection of building by owner. (Machinery lately noted ordered.)

Fla., Miami.—Southern States Utilities, capital \$15,000, inceptd.; John W. King, Pres.; C. K. Jaudon, V.-P.; E. R. Young, Secy.; C. D. Osborn, Treas.

Ga., Macon.—City let contract Steel Products Co. of Savannah, Ga., to build electric-light plant.

Ky., Prestonburg.—Prestonsburg Electric Light Co. increased capital from \$10,000 to \$25,000.

Ky., Lone Oak, R. D. from Paducah.—Home Electric Co. of Paducah, Ky., applied for franchise to construct electric-light system.

Mo., Mount Vernon.—City voted \$500 bonds to improve electric-light plant. Address The Mayor. (Noted in Feb. to vote on bonds to construct electric-light plant and to have engaged Albert C. Moore, Engr., Joplin, to prepare plans and specifications.)

N. C., Nashville.—City, L. T. Vaughan, Clerk, voted \$45,000 for electric-light, water and sewerage plants.

N. C., University.—University of North Carolina has authority to borrow \$10,000 to complete \$40,000 fund for installation light and heat plant to replace present equipment.

N. C., Zebulon.—City will vote on \$10,000 bonds to build electric-light plant. Address The Mayor.

Okla., Coyle.—City contemplates constructing electric-light plant and water-works. Address The Mayor.

Okla., Fort Cobb.—City contemplates constructing electric-light plant and water-works. Address The Mayor.

Okla., Gotebo.—Gotebo Light & Power Co. plans to install 25 to 50 K. W. direct-current 2 or 3-wire 220-volt generator, 325 R. P. M. and 15 to 20 K. W. 220-volt generator, 270 to 280 R. P. M.; generators to be connected directly to oil engines.

Okla., Paden.—Paden Light & Power Co. capital \$10,000, inceptd. by A. G. Rogers, W. E. Davis and W. G. Botts.

Okla., Stratford.—City voted \$35,000 bonds for electric-light plant and water-works. Address The Mayor. (Lately noted.)

Tex., Batson.—Thompson & Beltrich will rebuild burned electric-light plant and machine shop; estimated cost, \$50,000.

Tex., Beeville.—Texas Southern Electric Co. purchased site 135x390 ft.; erect brick building in which to install electric-light, power and ice plant, to be removed from present location; retain water plant on present site; install 125 K. W. generator with direct connection with tandem compound 160 H. P. engine weighing 45,500 lbs.; equipment ordered; now erecting brick pumping station at water-plant site, to be equipped with automatic pumps; ordered steel reservoir to be located near pumping station. (Noted in Dec.)

Tex., Gilmer.—Texas Public Service Co. contemplates installing 75-kva. 3-phase 60-cycle 2300-volt generator, directly connected to high-speed steam engine (non-condensing type); Neville Levy is local manager.

Tex., Valley Mills.—Mr. Miers of Dawson will install electric plant. Address Mr. Miers, care of The Mayor, Valley Mills.

Va., Radford.—Enterprise Power & Manufacturing Co. will probably be name of company to construct electric-light plant; 12-mi. transmission; no construction contracts; construction controlled by owner; develop 10,000 H. P.; Oren Dodds, Mgr. (Mr. Dodds lately noted applying for franchise.)

FERTILIZER FACTORIES

Md., Baltimore.—Griffith & Boyd Co., 5 S. Gay St., advises Manufacturers Record: Will make improvements to factory; given contract to install electric power instead of present method of steam.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Tenn., Nashville.—National Phosphate Fertilizer Co., capital \$600,000, incptd. by John E. Clagett, H. H. Huddleston, A. A. Grigsby and others.

Va., Money Point.—Virginia Hide & Fur Co., F. R. Thomas, Mgr., Richmond, Va., engaged Gwathmey Engineering Co., Norfolk, to prepare plans and specifications for fertilizer factory; first building to cost \$30,000; future plans include construction of chemical plant and ultimate investment of \$500,000. (Noted in Jan. and Feb.)

FOUR, FEED AND MEAL MILLS

N. C., Madison.—T. D. Mendor will erect roller flour mill; 2 stories; daily capacity, 50 bbls.

Tenn., Hampshire.—M. W. Kinzer and G. D. Blackwell will build mill; daily capacity 50 bbls. flour and proportionate capacity meal.

Tenn., New Tazewell.—W. E. Buis will rebuild burned flour mill; daily capacity, 50 bbls.

W. Va., Huntington.—Kelster Milling Co., capital \$50,000, incptd. by W. D. Kelster, I. J. Harshbarger, W. P. McAbey and others.

FOUNDRY AND MACHINE PLANTS

Ala., Gadsden.—Pipe, etc.—Campbell Mfg. Co. will erect addition to fitting shops; 100x100 ft.; cost \$1500.

Ala., Gadsden.—Cars.—Gadsden Car Works (main office, Cincinnati, Ohio) will improve plant; construct concrete wall, erect steel tank to cost \$5000 to \$8000 and install additional machinery, including bolt headers; total estimated cost \$22,000.

Ky., Louisville.—Culverts.—Kentucky Culvert Mfg. Co. increased capital from \$10,000 to \$25,000.

Md., Baltimore.—Refrigerating and Ice-making Machinery.—Chesapeake Engineering Co., capital \$100,000, incptd. by Philip G. Fredericks (Pres., Tri-State Supply Co.), 26 Law Bldg.; Ezra H. Ford and Wm. J. H. Culp.

Md., Baltimore.—Oil Engines.—Baltimore Oil Engine Co., Alfred W. Gieske, Pres., 3 E. German St., opens bids Apr. 20 for constructing plant building at 31st St. and Eastern Ave.; 200x100 ft.; brick, reinforced concrete and steel; fireproof construction; 3-story front and 1-story rear; basement; saw-tooth roof; composition roofing; steel window sash; steam heat; electric lighting; cost \$60,000; install machinery for building internal-combustion oil engine, 5 to 1000 H. P. (Heretofore noted incptd. with \$1,050,000 capital, having plans for buildings, etc.; Walter M. Gieske, Archt., 65 Gunther Bldg., Baltimore.)

Md., Elkridge.—Machine Shop.—Davis & Hemphill will build brick and steel structure; install equipment for automatic screw machine work.

Mo., St. Louis.—Stoves.—Frank L. Schaab Stove Co., capital \$12,000, incptd. by Frank L. Schaab, Benj. F. Becker and Frank Becker.

N. C., Wilmington.—Machine Shops, etc.—Tidewater Power Co. will rebuild machine and paint shops and carbarn reported burned.

Okla., Ada.—Fred Ford and A. H. Roberts will install machine and electrical shop.

S. C., Columbia.—Pressed Steel.—J. D. Kren of Norfolk, Va., plans to establish pressed-steel factory.

Tex., Cameron.—Machine Shop, etc.—F. C. Fahrendorf will erect machine shop and garage. (See Motors and Garages.)

Tex., Dallas.—Structural Steel.—Texas Structural Steel Co., 917 S. LaMar St., organized; J. H. Brillhart, Pres.; T. J. Mosher, V.-P.; W. S. Mosher, Secy.-Mgr.; erects and fabricates of structural steel. (Lately noted incptd., capital \$3000.)

Tex., Batson.—Thompson & Beltrich will rebuild burned machine shop and electric-light plant; estimated cost \$50,000.

GAS AND OIL ENTERPRISES

Ark., Conway.—Clear Creek Gas & Fuel Co. of Fort Smith, Ark., has municipal franchise to furnish gas; controls gas wells in Crawford county; plans to supply Arkansas territory as far east as including Memphis, Tenn.; petitioned for franchise from towns along Iron Mountain R. R. between Fort Smith and Little Rock.

Ark., Fort Smith.—McDonough Oil & Gas Co. incptd. by J. B. McDonough (Pres.), John Witherspoon, Roy M. Johnston and others.

Ky., Mayfield.—Gas Plant.—W. A. Calhoun, Paducah, Ky., Consult. Engr., represents

Eastern capitalists who will petition for franchise to build gas plant.

La., Cameron County.—Port Oil Co., Port Arthur, Tex., capital \$30,000, incptd. by C. W. Bishop, S. O. Latimer and Warren McDaniel; organized to drill on 2000-acre lease in Cameron county.

Okla., Avant.—Avant Oil & Gasoline Co., capital \$15,000, incptd. by J. B. Crisman, J. H. McCustion, A. K. Edmondson and C. W. Spivey.

Okla., Blackwell.—Oil Pipe Line.—Blackwell Oil & Gas Co., J. L. Waite, Pres., will construct 50 mi. pipe line; 8-in. to 14-in. pipe; no set time for drilling or machinery bids; capital stock \$210,000.

Okla., Blackwell.—Sylvan Oil Syndicate, capital \$5000, incptd. by V. A. Wood and Homa Wood of Blackwell and D. A. Rose of Watonga, Okla.

Okla., Checotah.—Checotah Natural Gas Co., capital \$30,000, incptd. by R. J. Koch, Joe N. Keeney, E. M. Hill and others.

Okla., Coalgate.—Victoria Developing Co., capital \$30,000, incptd. by G. E. Vaughn, A. K. Wheeler and J. G. Loving.

Okla., Enid.—Mesa Oil & Gas Co., capital \$30,000, incptd. by Frank McGwen and John F. Curran of Enid and Harold Bucher of Bartlesville, Okla.

Okla., Muskogee.—Red Bird Oil & Gas Co., capital \$100,000, incptd. by M. E. Johnson, G. G. Johnson and L. J. Roach.

Okla., Muskogee.—Musselshell Oil & Gas Co., capital \$30,000, incptd. by M. S. Musselshell, P. H. Steam and C. H. Wasson of Muskogee and R. A. Boutross of Kansas City, Mo.

Okla., Muskogee.—Sam & Bill Oil Co., capital \$3000, incptd. by W. D. Egolf and Marie Hornaday of Muskogee and S. B. Longfellow of Tulsa.

Okla., Nowata.—Kano Oil Co., capital \$30,000, incptd. by S. A. Lane, C. E. Ranney and G. M. Ranney of Nowata and G. B. Calvin of Kansas City, Mo.

Okla., Oklahoma City.—Belt Oil & Gas Co., capital \$100,000, incptd. by H. M. Hand, Jas. Brazell and Gussie A. Huey.

Okla., Ringling.—Oil Refinery.—Mohawk Refining Co. of Oklahoma City plans to build oil refinery.

Okla., Sapulpa.—McMahan Oil Co., capital \$50,000, incptd. by H. H. Barker, C. W. Dunbar, Gus L. Corey and C. K. Maddox.

Okla., Ti.—Ti Oil & Gas Co., capital \$50,000, incptd. by J. C. Wilkerson of Ti, H. C. Pratt and H. P. Warner of Fort Smith, Ark.

Okla., Tulsa.—States Petroleum Co., capital \$50,000, incptd. by J. H. Winemiller, L. W. Baxter and P. B. Sterling.

Okla., Tulsa.—Dorothy Producing Co., capital \$50,000, incptd. by J. C. Wilkinson of Ti, H. C. Pratt Aggers, W. K. Campbell and others.

Tex., Hallettsville.—Sullivan Oil Co., capital \$4500, incptd. by J. R. Boles, Martin Arrendondo and John A. Kerr.

Tex., Houston.—Phoenix Oil Co., capital \$60,000, incptd. by John H. Kirby, T. H. Bass and E. J. Eyres.

Tex., Houston.—Melekov Oil Development Co., capital \$50,000, incptd. by Richard Rodgers, Leon Melekov, Nathan Melekov and D. F. Boyles.

Tex., Houston.—German-American Oil Co., capital \$15,000, incptd. by J. O. Ehlinger, S. G. Stokes and Geo. E. Ehlinger.

Tex., Houston.—Tarter Oil & Gas Co., capital \$10,000, incptd. by J. C. Nelson, F. I. Ward and W. J. Wade.

Tex., Houston.—Manufacturers' Oil Co., capital \$15,000, incptd. by T. C. Bering, A. C. Bering and J. W. House.

Tex., Houston.—The Texas Co., Houston, and 17 Battery Pl., New York, increased capitalization from \$37,000,000 to \$44,000,000; additional capital for continuing developments and extending operations; latter include utilizing Sewall shipyards (recently leased) at Bath, Me., for constructing oil-trade vessels. (Recently noted to vote on increasing capital by \$7,400,000.)

Tex., Port Arthur.—Port Oil Co. (lately noted incptd., will operate in Louisiana. (See La., Cameron County.)

Tex., Victoria.—Churchill Oil Co., capital \$6000, incptd. by F. S. Buhler, Oscar Roos and B. C. Armstrong.

W. Va., Clay.—Hartland Oil & Gas Co. (lately noted incptd. by O. L. Hall and others) installing initial well; contemplates drilling 6 or 7 additional wells; capital stock \$20,000; owns 5000 acres oil and gas lands; has lease on 3000 acres. (See Machinery Wanted—Well-drilling Machinery.)

W. Va., Wheeling.—Panhandle Exploration Co., capital \$50,000, incptd. by Jacob J. Holloway, Chester R. Hubbard and others.

HYDRO-ELECTRIC PLANTS

Ala., Birmingham.—Alabama Power Co., James Mitchell, Pres., Equitable Bldg., New York, and F. H. Chamberlain, Gen. Mgr., Birmingham, proposes additional hydro-electric developments requiring investment of \$3,000,000; other plans involve ultimate expenditure up to \$100,000,000 throughout Alabama; plans outlined as follows: Build steam plant and hydro-electric power unit; ultimate development in Alabama predicated upon legislation regarding power sites now sought in Washington and bears special reference to use of Muscle Shoals; new unit to develop 17,500 H. P. and steam plant 35,000 H. P.; latter for service only in few possible periods when river is so low in water as to reduce hydro-electric power at the lock; the three items listed for inception and part completion this year entail expenditure of about \$3,000,000; remainder of \$100,000,000 said to be available bears relation to ultimate future and possibilities of favorable legislation. President Mitchell writes to Manufacturers Record: "Providing for bond issue of \$100,000,000; \$4,000,000 placed for immediate needs; further amounts issued when required; contracts placed for hydro-electric unit at Lock 12 on Coosa River; 20,000 H. P. or slightly larger than original units; plans being worked out for installation 20,000 K. W. steam plant, necessary to safeguard power supply in times of extreme drought; contracts during coming week; site not definitely selected; many opportunities to place such plant along Black Warrior River basin, where coal can be cheaply obtained from numerous mines; extend transmission lines."

ICE AND COLD-STORAGE PLANTS

Ala., Fayette.—Sipsey Valley Oil & Fertilizer Co., Thos. H. Robertson, owner, will install lately-noted ice and electric plant; has equipment. (See Electric Plants.)

Ark., Arkadelphia.—Mack Risinger of Nashville, Ark., will establish ice plant; daily capacity 20 tons.

Ark., Waldron.—W. S. Mitchell is reported to build 5-ton ice factory and cold-storage plant.

Fla., Jacksonville.—Willie Ice Maker Co. of Florida, capital \$50,000, incptd.; Chas. E. Terry, Pres.; H. P. Adair, V.-P.; R. D. Knight, Secy.-Treas.

Fla., St. Petersburg.—Co-operative Ice Co., capital \$60,000, incptd.; G. Hall White, Pres.; W. O. White, V.-P.; D. F. Conrad, Secy.-Treas.

Ky., Louisville.—William Loyal Ice & Coal Co., capital \$2500, incptd. by Wm. Loyal, C. N. Boone and L. J. Bergenroth.

Ky., Moreland.—L. F. Steele, Pres., Hustonville Telephone Co., Hustonville, Ky., will establish ice plant.

Miss., Biloxi.—Southern Brokerage & Warehouse Co., capital \$50,000, incptd. by Louis Goldman, C. B. Foster and others; reported to establish cold-storage warehouse.

Mo., St. Louis.—Booth-St. Louis Cold Storage Co. will remodel cold-storage warehouse; cost \$22,000; construction by owner.

Mo., St. Joseph.—St. Joseph Cold Storage & Warehouse Co. has plans and secured bids for erection of cold-storage warehouse; 3 stories and basement; cost \$125,000.

Mo., Van Buren.—R. J. Mann, Secy. Commercial Club, is promoting establishment of ice factory and cannery.

Okla., Commerce.—Miami Ice Co. will install 7-ton ice plant; opened bids Mch. 1 to erect 30x60-ft. ordinary-construction building; H. Plummer, Mgr. (Lately noted.)

Okla., Hooker.—Herriott & Rauch are reported to build 5-ton ice plant.

Okla., Sallisaw.—Superior Ice Co. (W. M. Gibson) will build ice plant; daily capacity 15 tons; purchased machinery. (Lately noted incptd. with \$20,000 capital.)

Tex., Big Springs.—A. C. Murray, Clarksburg, Tenn., and associates purchased Big Springs Ice & Mfg. Co. plant; reported to contemplate improvements.

Tex., Fort Worth.—Alta Vista Creamery Co., M. E. Berney, Pres., will build 15-ton ice plant and 50-ton refrigerating plant. (See Miscellaneous Factories.)

IRON AND STEEL PLANTS

Ga., Atlanta.—Steel Furnaces, etc.—Atlantic Steel Co. will invest \$100,000 during 1916 for additions to plant; planning to increase productive capacity in several units; new corporation and machinery details not ready for announcement; plant has annual capacity 45,000 tons ingots, 40,000 tons billets, 30,000 tons wire rods, 20,000 tons rails, 150,000 kegs wire nails, 100,000 kegs railroad spikes, 10,000 tons wire, 6000 tons barbed and gal-

vanized wire; offices with Wm. Morris Imbrie & Co., 61 Broadway, New York. (Atlantic Steel Co. noted in December as incptd. with \$750,000 capital, succeeding Atlanta Steel Co., purchased by Wm. Morris Imbrie & Co., New York, with plans for increasing output raw steel, etc.)

Ky., Ashland.—Steel Plant.—Ashland Iron & Mining Co. has let following contracts in connection with erection of open-hearth steel works: United Engineering & Foundry Co., Pittsburgh, Pa., for 36-in. blooming mill; General Electric Co., Schenectady, N. Y., for reversing and other electric motors; Mt. Vernon Bridge Co., Mt. Vernon, O., for structural steel; plant will also include three 75-ton open-hearth furnaces and two soaking pits; motor driven; steel structures; R. R. Smythe Co., Pittsburgh, Pa., will superintend erection of furnaces. (Lately noted.)

Md., Sparrows Point.—Iron Furnaces, Steel Mills, etc.—Maryland Steel Co. improvement plans are outlined to Manufacturers Record by E. G. Grace, Pres., Bethlehem Steel Corp., Bethlehem, Pa., as follows: Take advantage of conditions for important additions to plant; include additional steel lines as well as extending shipbuilding facilities; double blast furnace capacity and add corresponding amount steel ingot capacity, possibly in both open-hearth and Bessemer plants; utilize this steel in finished products such as tinplate, merchant bars, wire product and plate; looking forward to improving properties to extent of from \$10,000,000 to \$20,000,000. (Bethlehem Steel Corp. lately noted as having purchased Pennsylvania Steel Co. at \$31,500,000, including control of Maryland Steel Co., with plans for extensive betterments.)

Tenn., Chattanooga.—Steel Furnaces, Electric Furnace, etc.—Chattanooga Steel Co., C. E. James, advises Manufacturers Record of further details: Has 100-acre site on Tennessee River; constructing spur track to Southern and Queen & Crescent Rys.; construct concrete and steel building; plans provide plant 290x200 ft.; install two 75-ton open-hearth furnaces with layout for four additional furnaces; other installations to include electric furnace with daily capacity 30 tons, 34-in. blooming mill with 10-hour capacity 800 tons, sheet mill, tin-plate mill, bar and billet mill; electric power drive; electricity from Chattanooga-Tennessee River Power Co., with hydro-electric plant at Hales Bar; construction under supervision W. R. Miller Co.; let contract National Rolling Mills Co. to equip rolling mill; let contract Westinghouse Electric & Mfg. Co. for electrical machinery; these three companies of Pittsburgh; has also let contracts for other principal equipment; estimated cost plant, \$2,000,000; daily output, 450 tons finished product; W. R. Miller Co., Const., Engr. and Contr. (Lately noted to organize with \$2,000,000 capital to build furnaces, etc.)

LAND DEVELOPMENTS

Ala., Perdido Station.—Southern Slav Colonization Co., capital \$25,000, incptd. by Anthony Blankin, S. D. Ratkovich, Frank Pintar and others; plans to establish colony of Slaves in Baldwin county, engage in agriculture, etc.

Fla., DeFuniak Springs.—City votes Apr. 4 on \$6000 bonds to improve cemetery and \$3000 to improve parks. Address The Mayor.

La., Plaquemine.—Peanut Planting & Mfg. Co., capital \$10,000, incptd. by Jas. Dunlap, Jacob McWilliams, Henry Nadler and others.

Md., Baltimore.—J. Chas. Linthicum & Bro., 217-219 St. Paul St., purchased 62 acres and will develop as suburb; will construct 3 roads, build sidewalks, etc.

Mo., St. Charles.—City, Chas. H. Kanstner, Clerk, contemplates park improvements; cost \$12,000.

S. C., Spartanburg.—Fernwood Land Co. organized; H. A. Lizon, Pres.; A. M. Creitzberg, Treas.; M. E. Bowden, Secy.; develop 280 acres adjoining city limits. (Lately noted incptd., capital \$2000.)

Va., Norfolk.—Atlantic Beach Hills, capital \$10,000, incptd.; R. R. Upton, Pres.; G. E. Brazenor, Secy.

Va., Richmond.—Delta Development Corp., capital \$100,000, chartered; A. T. Massey, Pres.; C. Ridgway Moore, Secy.-Treas.

Va., Richmond.—Richmond River Front Land Corp., capital \$10,000, chartered; John T. Sloan, Pres.; J. A. Branch, V.-P.; R. G. Cabell, Secy.-Treas.

LUMBER MANUFACTURING

Ark., Heber Springs.—Cleburne County Lumber Co., capital \$2000, incptd. by E. H. Ewing of Heber Springs; L. T. Child, Richmond, Mo., and J. F. Goodman of Kansas City, Mo.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Fla., Fort Myers.—Dorwin-Turner Lumber Co., capital \$15,000, inceptd.; Orville J. Dorwin, Pres.; Vernon G. Winderquist, V.-P.; Walter S. Turner, Secy.-Treas.

Fla., Pierson.—Wainwright Lumber Co., capital \$5000, inceptd.; T. E. Wainwright, Pres.; A. N. King, V.-P.; S. R. Wainwright, Secy.-Treas.

La., Amite.—Bourgeois & Stockstill are reported to install sawmill.

La., Jena.—White Sulphur Lumber Co. will rebuild burned sawmill.

Miss., Pachuta.—Meridian Lumber & Mfg. Co. (Louis H. Arky of Meridian, Miss., and others) will build mill with daily capacity 15,000 ft. at Pachuta, and another of 15,000 ft. daily capacity in Kemper county 8 mi. from Schumbersville. (Lately noted inceptd., under Miss., Meridian, with \$25,000 capital.)

N. C., Beaufort.—Carteret Lumber Co., capital \$250,000, inceptd.; Geo. E. Major, Pres.; T. S. White, V.-P.; W. R. White, Secy.; Wm. B. Hudson, Mgr.; will establish mill with daily capacity 75,000 ft. kiln-dried lumber; install sawmill equipment, cost \$50,000.

N. C., Elizabethtown.—Lexington Lumber Co., capital \$25,000, inceptd. by R. L. McCrary and W. O. Burgin of Lexington and E. C. and R. M. Stokes of Newsom, N. C.; establish plant at Elizabethtown; offices at Lexington.

Okla., Drumright.—Briggs Lumber Co., capital \$20,000, inceptd. by Jno. W. Briggs, Aaron Drumright, J. G. Bennett and R. C. Achtermann.

S. C., Ehrhardt.—Ehrhardt Mill Co., capital \$10,000, inceptd. by Julian Mitchell and F. H. Horbeck, both of Charleston, S. C.

S. C., Lumber.—D. T. McKethan Lumber Co., capital \$600,000, inceptd.; Robt. L. Gilliam, Pres.; Emil Klesewetter, Secy.-Treas.

S. C., Lexington.—Crosley Bros. will rebuild sawmill reported burned.

S. C., Sumter.—Sumter Mfg. Co., capital \$20,000, inceptd. by O. S. Leinke, R. S. Bacon, J. Strand and A. W. Underwood.

Va., Centralia.—Davis-Eakin Lumber Co., Skyles, W. Va., is reported to build band-saw mill; purchased 12,000 acres timber land.

W. Va., Huntington.—D. E. Hewitt Lumber Co., capital \$250,000, inceptd. by D. W. Hewitt (Pres.), A. M. Hewitt, Ruth C. Hewitt and others; consolidates D. E. Hewitt Lumber Co., Wolf Creek Lumber Co. and D. E. Hewitt Co.; purchased 8000 acres timber land at Flo, W. Va.; build band-saw mill.

W. Va., Wainville and Custis, P. O. Prestouta.—Harmount, Hall & Co. will erect sawmill buildings; ordinary construction; purchased circular mill machinery; daily capacity, 30,000 ft. hardwood lumber; sawmill and commissaries at Custis and Wainville; Timmons Harmount, Chillicothe, O., Pres.; S. L. Parsons, Beech Hill, W. Va., V.-P.; W. W. Brust, Secy.; E. D. Hall, Mgr. (See Machinery Wanted—Rails and Cars.)

METAL-WORKING PLANTS

Fla., Tampa.—Metal Finishing.—Walter S. Barrows, Leesburg, Fla., is considering establishment of metal-finishing plant.

W. Va., Keyser.—Washing Machines.—C. L. Wiseman will manufacture washing machines. (See Machinery Wanted—Tinners' Tools.)

MINING

Ala., Russellville.—Iron.—Alabama Fuel & Iron Co., Birmingham, Ala., let contract to Concrete-Steel Construction Co., 606 Chamber of Commerce, Birmingham, for reinforced concrete building covering ore dump, crushers and screening operations; also machinery foundations.

Ark., Maumee.—Zinc.—Jack Pot Zinc Mining Co., Yellville, Ark., organized; A. Rich, Pres.; T. W. Neal, V.-P.; Steve Degiacomo, Secy.; has 150-ton concentrating plant. (Lately noted inceptd., capital \$15,000.)

Mo., Carthage.—Lead and Zinc.—Little Martha Mining & Milling Co. increased capital from \$30,000 to \$30,000.

Mo., Duenweg.—Lead and Zinc.—Evans-Hall-Soy Co., capital \$50,000, inceptd. by C. T. Orr and others; will build 250-ton concentrating plant.

N. C., Jefferson.—Geo. A. Blow of Knoxville, Tenn., is reported to develop copper mines; now installing boiler, pump, etc., to pump water from shafts.

Okla., Bromide.—Lime.—Viola White Lime Co. (lately noted inceptd., capital \$25,000) will develop 20 acres; daily capacity 150 bbls.; J. H. Montgomery, Pres.; W. W. Montgomery, Secy. (See Machinery Wanted—Crusher and Pulverizer, etc.)

Tenn., Knoxville.—Marble.—Dixie Gray Marble Co., capital \$50,000, inceptd. by H. B. Lindsay, W. J. Donaldson, Sam E. Young and others.

Va., Radford.—Stone.—Southwestern Stone & Lime Co.'s stone business taken over by Chas. A. Klotz Co., Chicago, Ill.; lately noted under both Radford and Rippledand, Va. (See Coal Mining and Coal Operators.)

Va., Richmond.—Manganese.—United States Manganese & Mineral Corp., capital \$100,000, chartered; S. M. Black, Pres.; Wm. J. Salisbury, Secy.; both of Pittsburgh, Pa.

Va., Richmond.—Big Four Mining & Leasing Corp., capital \$10,000, chartered; Jas. H. Lang, Pres.; Richmond; J. A. Schloss, Secy.-Treas., 42 Broadway, New York.

Va., Smyth County.—Iron and Manganese.—G. H. Snyder of Philadelphia, Pa., is reported to install plant at Umberger mines in Rye Valley, Smyth county.

W. Va., Greer.—Glass Sand.—Preston Glass Sand Co., capital \$30,000, inceptd. by John Shoemaker and Morrison Barclay of Greensburg, Pa.; John E. Hays of Morgantown, W. Va., and others.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile.—City let contract Hancock, Harbin & Hancock at \$3645.70 to construct open reinforced concrete canal, 923 ft. long and 12x4.5 ft. in dimensions, from Montgomery to Virginia St.; also to build reinforced concrete bridge at Lawrence and Virginia Sts.; H. Pillans, City Commr.; Wright Smith, City Engr., Municipal Bldg. (Call for bids lately noted.)

Fla., West Palm Beach.—Seawall.—City let contract J. B. Davidson & Co., Little Rock, Ark., at \$49,583 to construct seawall and make back fill; J. B. McCrary Co., Engr., Third National Bank Bldg., Atlanta, Ga. (Call for bids lately noted.)

Tex., Houston.—Wharf.—City will soon invite bids to construct Wharf No. 4; erect reinforced concrete shed 663x110 ft., platform 770x20 ft., loading platform and 5 railroad tracks; accommodate 2 ships at one time; plans provide for asphalt covering with concrete base for platform; equipment to include 20-ton traveling crane operated by electricity; estimated cost, \$400,000; plans and specifications by E. E. Sands, City Engr., and E. A. Fretz of engineering department; this is second municipal wharf to be erected at Turning Basin and is to be provided for in bond issue previously voted. (Noted in Jan. to have let contract Jas. Stewart & Co. for Wharf No. 1.)

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Decorating.—Colby Decorating Co., capital \$10,000, inceptd.; Carroll D. Colby, Pres.; Willis D. Colby, Secy.-Treas.

Ala., Mobile.—Coal Transportation.—Alabama Coal Transportation Co., capital \$500,000, inceptd. by H. E. McCormack (V.-P. and Gen. Mgr. Pratt Consolidated Coal Co.), Birmingham; Robt. P. Hyams (Pres. Hyams Coal Co.) and H. C. Whiteman (of Whiteman Bros.), both of New Orleans; acquired barge fleet of Pratt Consolidated Coal Co., operating on Warrior and Tombigbee rivers, and will add 30 river barges and 2 towboats.

Ark., Little Rock.—Dairy.—Oak Lawn Dairy Co., capital \$15,000, inceptd. by Gus Breitke, Peter Kumpuris, J. M. Campbell and others.

D. C., Washington.—Printing.—Judd & Detweiler will erect 2-story brick print shop on Florida Ave. N. E.; cost \$35,000; Arthur B. Heaton, Archt., 1512 H St. N. W., Washington; David Construction Co., Contr., Washington.

Fla., Jacksonville.—Publishing.—Florida Magazine Publishing Co., capital \$5000, incorporated; A. C. Arnold, Pres.; H. A. Lobgshore, V.-P.; Willie Van Trump, Secy.; H. F. Van Trump, Treas. and Gen. Mgr.

Fla., Tampa.—Printing.—Jas. W. Booth, care of Traffic Dept., Tampa & Gulf Coast R. R. Co., contemplates establishment printing and envelope plant. (See Miscellaneous Factories. See Machinery Wanted—Printing Machinery.)

Ga., Atlanta.—Amusement Device.—Southeastern Fair Assn., Ivan E. Allen, Pres., let contract Lynn Welcher and Francis E. Jones of New York to erect \$20,000 Old Mill at Lakewood Park; understood that association is arranging other contracts, aggregating \$75,000, for amusement devices.

Ga., Atlanta.—Hay Compressing.—McDonough Compress Co., Box 490, lately noted (under Cotton Compresses and Gins) Incorporated, capital \$500,000, organized with J. H. McDonough, Dallas, Tex., Pres.; W. H. Camp, V.-P.; N. B. Henry, Secy., each of Atlanta; advises will probably locate plants costing \$20,000 each in several Southern seacoast cities; produce compressed hay; daily capacity 250 tons per plant; machinery (now being constructed) consists of steam compresses and boilers; has leased one building;

not intending to erect buildings at present. (See Machinery Wanted—Bollers.)

Ga., Atlanta.—Laundry.—Capital City Laundry will repair laundry; cost \$2500; P. Francis, Contr.

Ga., Atlanta.—Amusement Device.—Southeastern Fair Assn. let contract Austin McFadden Co., Grand Rapids, Mich., at \$22,500 to build roller coaster at Lakewood.

Ga., Dalton.—Laundry.—J. H. Porter, Rome, Ga., will remodel building and equip for steam laundry; machinery to cost \$8000.

Ky., Taylorsville.—Publishing.—Spencer Magnet, capital \$1000, inceptd. by R. H. Snider, Dessie Snider and Katie B. Beauchamp.

Ky., Whitesburg.—Publishing.—Mountain Eagle Publishing Co., capital \$2000, inceptd. by N. M. Webb, L. E. Harvie and David Hays.

La., Plaquemine.—Chatham Dairy & Stock Farm, capital \$5000, inceptd.; John T. Guyton, Pres.; John F. Smith, V.-P.; Leonie M. Soulat, Secy.-Treas.

Miss., Jackson.—Limestone Crushing.—State appropriated \$20,000 to establish 2 limestone crushing plants to be operated by Prison Board with convict labor.

Mo., St. Louis.—Abattoir.—Heil Packing Co. will build 1-story abattoir; cost \$16,000; E. Shassee, Contr.

Mo., St. Louis.—Mineral Water.—Washington Mineral Water Co., capital \$25,000, incorporated by Arthur Brinkmeyer, Jos. Goeke, Jr., and Geo. Mohrman.

Mo., St. Louis.—Abattoir.—Heil Packing Co. will build slaughtering-house; 60x100 ft.; 2 stories; reinforced concrete and brick; building and equipment, \$40,000; Helfensteller, Hirsch & Watson, Archts.; E. P. Shassee, Contr.

Okla., Oklahoma City.—Bridge Contracting.—Canadian Valley Bridge & Construction Co., capital \$200,000, inceptd. by H. F. Mitchell, Oklahoma City; Jas. E. Wright, Newcastle, Okla.; Geo. D. Kay, Tulsa Okla., and John Franing, Norman, Okla.

Okla., Kingfisher.—Grain Elevator.—Farmers' Elevator Co., capital \$10,000, inceptd. by Geo. Newer, A. Zalabak and R. P. Every.

S. C., Isle of Palms.—Amusement Resort.—Isle of Palms Amusement Co. (New York office, Suite 401, Galety Theater, Broadway and 46th St.) will create a midway, installing amusements, Ferris wheels, coaster, etc.

Tenn., Knoxville.—Laundry.—Star Laundry Co. will erect laundry building; 2 stories and basement; 60x130 ft.; fireproof; mill construction; cost \$20,000.

Tenn., Columbia.—Laundry.—Maury Laundry Co. leased storeroom, 25x75 ft., adjoining present building and will remodel as addition to laundry; purchased 100 H. P. boiler, increasing boiler capacity from 35 to 135 H. P.; erect addition to boiler-room; in rear of annex will install dry-cleaning plant; archway to connect two buildings.

Tenn., Memphis.—Waterproofing.—National Waterproofing Co., capital \$250,000, inceptd. by T. B. Greer, E. W. Parker and C. W. Curling.

Tex., Dallas.—Construction.—Texas Construction Co., capital \$5000, inceptd. by W. H. Painter, C. L. Cox and W. L. McElvaney.

Tex., Houston.—Construction.—Houston Construction Co., capital \$2500, inceptd. by W. F. Warfield, Gus H. Moore and Rodmans Cosby.

Tex., San Antonio.—Lithographing.—Maverick-Clarke Litho. Co. will erect bldg.; 1 story; concrete; fireproof; glass sides; steel sash and door frames; ultimate plans call for structure 150x350 ft., giving ground floor space of about 50,000 sq. ft.; Alfred G. L. Toombs, Structural Engr.; R. H. Cameron, Consult. Engr.

Va., Hopewell.—Laundry.—Home Laundry Co., capital \$50,000, inceptd.; T. A. Burford, Pres.; A. McGarvey, Treas.; W. H. Daniel, Secy.

Va., Staunton.—Hardware.—C. P. Bowman Hardware Co., capital \$100,000, inceptd.; C. P. Bowman, Pres.; Clarence Spitzer, Secy.

Va., Wachapreague.—Fish.—Deep Sea Fish Co., capital \$5000, inceptd.; W. M. Turlington, Pres.; Thos. R. Nock, Secy.-Treas.

W. Va., Bluefield.—Florists.—Alexander Cut Flower & Plant Co., capital \$25,000, inceptd. by W. C. Alexander, M. B. Alexander, R. C. Goodrich and others.

MISCELLANEOUS FACTORIES

Ala., Birmingham.—Tires.—Northside Tire Co., capital \$2000, inceptd.; John P. Abbott, Pres.; Allen D. Abbott, V.-P.; John C. Rowlett, Secy.-Treas.

Fla., Jacksonville.—Films.—Mirror Film Co. contemplates erecting studio in which to produce photo plays; H. J. Streycmanns, Studio Mgr., Hotel Seminole.

Fla., Lakeland.—Plant Tonic.—Plant Tonic Co., capital \$10,000, inceptd.; C. W. Dean, Pres.; Fred L. Sawyer, V.-P.; H. E. Munn, Secy.; W. D. McKee, Treas.

Fla., Meadows, P. O. Citra.—Peat Products.—Florida Peat Products Co., Ocala, Fla., will erect plant to cost \$75,000; daily capacity 20 tons prepared humus; Ralph W. Lobenstein, 162 E. 71st St., New York, Pres.; Robt. A. Alfred, V.-P. and Mgr.; David S. Williams, Secy. (Lately noted inceptd., capital \$100,000, to manufacture peat products, especially fuel.)

Fla., Tampa.—Overalls.—W. D. Funk of Wooster, O., is reported as contemplating establishment of overall factory.

Fla., Tampa.—Power Fans.—W. J. R. Strong of Lake Breeze Motor Co., Chicago, Ill., is reported as planning to establish plant to manufacture power (alcohol) motors; require about 5000 sq. ft. floor space.

Fla., Tampa.—Envelopes.—Jas. W. Booth, care of Traffic Dept., Tampa & Gulf Coast R. R. Co., contemplates establishment envelope manufacturing and printing plant. (See Miscellaneous Enterprises. See Machinery Wanted—Envelope Machines.)

Ga., Albany.—Linters.—Planters' Oil Co. may install equipment to bleach linters for nitrating. (See Machinery Wanted—Bleaching Machinery.)

Ga., Brunswick.—Shipbuilding.—Brunswick Shipbuilding Co., capital \$50,000, inceptd. by J. H. Leo and others, establish plant to build schooners for lumber trade Atlantic coast, with home port at Brunswick.

Ga., Savannah.—Sugar Refinery.—Savannah Sugar Refining Co., B. Z. Oxnard, Pres. and Gen. Mgr., let contracts Westinghouse-Church-Kerr & Co., New York, to construct and equip plant; annual capacity 150,000 tons. (Previously noted to organize with \$2,500,000 capitalization, etc.)

Ky., Elizabethtown.—Revolving Lights.—Revolving Light Co. increased capital from \$15,000 to \$25,000.

Ky., Hopkinsville.—Bottling.—Coca-Cola Bottling Co., capital \$5000, inceptd. by J. E. Carson, L. F. Carson and T. E. Overshiner.

Ky., Hopkinsville.—Bottling.—Coca-Cola Bottling Co., No. 4, inceptd. by T. E. Overshiner of Hopkinsville, Luther T. Carson of Paducah, Ky., and John F. Carson of Evansville, Ind.

Md., Baltimore.—Paper Boxes.—Baltimore Paper Box Co., 1201-1215 S. Howard St., is reported to enlarge plant.

Md., Baltimore.—Smoke-consuming Device.—Universal Smoke Consuming Device Co., capital \$100,000, inceptd. by Edward H. Jordan, Loney's lane, near Sinclair lane; Michael A. M. McCormick, Geo. T. Reed and others.

Md., Baltimore.—Rubber Tires.—Baltimore Rubber Tire Mfg. Co., Albert S. Mauk, Gen. Mgr., 219 Equitable Bldg., purchased buildings at Orangeville, eastern suburbs; brick and concrete; remodel to meet requirements; main building 80x160 ft., storeroom 80x80 ft. and machine shop 50x60 ft.; has 2 boilers, each 150 H. P.; augment with electricity; special machinery for treating and developing rubber from crude state to finished product; install calendars, mills, grinders, washers, drivers, vulcanizers, coils, molds and reclaiming plant; rubber machinery contract let to Turner, Vaughn & Taylor Co., Cuyahoga Falls, O. (Lately noted inceptd. with \$200,000 capital.)

Md., Elkton.—Cowan Mfg. Co., capital \$5,000, inceptd. by Clement M. Egner and others.

Md., Lake Shore.—Luke Swift, 436 E. 23d St., Baltimore, will build 200x56-ft. 2-story factory and other structures.

Md., Lake Shore.—Burlap Bags, etc.—M. J. Swift & Co., Luke Swift, Propr., 15 E. Camden St., will build plant; 200x50 ft.; 1 story; fireproof; tar and gravel roof; concrete floor; store shippers' supplies, etc.; probably manufacture shippers' supplies, including burlap sacks.

Md., Sparrows Point.—Shipbuilding.—Maryland Steel Co. will erect addition to boiler-house; steel and concrete; 1 story; 75x130 ft.; bidders estimating include P. J. Cushen, 217 St. Paul St.; West Construction Co., Knickerbocker Bldg.; Singer-Pentz Co., 600 Equitable Bldg.; each of Baltimore.

Miss., Tupelo.—Fiber.—Tupelo Fiber Co., capital \$50,000, inceptd. by A. C. Beane, J. E. Knox and others.

Mo., Kansas City.—Distillery.—Frankfort Distilling & Importing Co., capital \$2000, inceptd. by F. E. Landfired, G. D. Anderson and Robt. Friar.

Mo., North Kansas City.—Varnishes.—C. R. Cook Paint Co., 2107 Broadway, Kansas City, let contract Mr. Van Sant to erect \$17,000 fireproof building after plans by Smith, Rea & Lovitt, Kansas City; will manufacture

ture varnishes; Chas. R. Cook, Prest. and Mgr.; J. H. Snedeker, V.-P.; T. G. Buecking, Secy. (Lately noted.)

Mo., St. Louis—Leather.—Johnson, Stephens & Patton Leather Co., capital \$2000, inceptd. by Arthur S. Patton, Andrew W. Johnson and Howard W. Stephens.

N. C., Winston-Salem—Portable Buildings, etc.—Knapp Building System, Inc., capital \$100,000, inceptd.; Prest., Horace Greely Knapp (of Humphreys, Faw & Knapp), Winston-Salem; G. C. Humphreys, Secy., Winston-Salem; L. M. Knapp, Treas., New York; erect factory buildings to cost, with site and equipment, \$10,000 to \$15,000; will design and manufacture portable permanent buildings in wood, steel, stucco and other materials; also proposes to manufacture folding furniture, etc.

Okla., Oklahoma City—Tires.—Southwest Tire Mfg. Co., capital \$250,000, inceptd. by W. A. McClelland, J. T. Wheatley, Jno. L. McClelland and C. Chas. Jones.

S. C., Camden—Bottling.—Camden Coca-Cola Bottling Co., 288 Broad St., organized by E. H. Baum and S. W. Baum.

S. C., Charleston—Asbestos and Rubber.—General Asbestos & Rubber Co. let contract Steel Products Co. of Savannah, Ga., to erect 2 steel factory buildings.

S. C., Hartsville—Marble.—Hartsville Marble Works increased capital from \$3000 to \$10,000.

S. C., Spartanburg—Creamery.—Spartanburg Co-operative Creamery, capital \$5000, inceptd. by Paul V. Moore, Gabriel Cannon and J. B. Cannon. (Chamber of Commerce lately noted as promoting establishment of co-operative creamery.)

Tenn., Chattanooga—Bottling.—C. D. Little of Rome, Ga., is promoting establishment of choco-cola bottling plant; cost \$15,000 to \$20,000.

Tenn., Chattanooga—Army Leggings, etc.—Lippman-Ryan Mfg. Co. (J. L. Ryan and others) will build plant to manufacture army leggings, gun covers, gloves, etc. (Lately noted inceptd. with \$25,000 capital.)

Tenn., Kingsport—Caustic Soda and Chlorine.—Federal Dyestuff & Chemical Co., 30 Pine St., New York, will build plant with daily capacity 20 tons caustic soda and 20 tons chlorine; construct 1-story 200x300-ft. building; equip with electrolytic cells; use products to manufacture intermediate materials for manufacturing dyes; electric power; 300 to 400 K. W. (This \$15,000,000 company's plans to build factory for dyestuffs, chemicals, etc., previously detailed.)

Tenn., Nashville—Breakfast Food, etc.—Southern Food Mfg. Co., capital \$100,000, inceptd. by W. B. Pickard, H. T. Campbell, Will C. Anderson and others; acquired Allgood Co.'s plant and will double output.

Tex., Dallas—Creamery.—Alvin & Houston Creamery Co., J. J. Nicholson, Mgr., Houston, Tex., will establish distributing plant at 38 N. Harwood St.; cost about \$1500; rented building; installed equipment; wholesale butter, about 1000 lbs. daily. (Lately noted to establish branch.)

Tex., Fort Worth—Creamery.—Alta Vista Creamery Co., M. E. Berney, Prest., will build creamery, ice-cream factory, 15-ton ice plant and 50-ton refrigerating plant; manufacture 1,000,000 lbs. butter annually; ice-cream factory to have dry hardening room of 600 gals. capacity; let contract for equipment.

Tex., Houston—Mineral Water.—Mira-co Co., capital \$30,000, inceptd. by Thos. Flaxman, F. A. Helmann, J. S. Rice and others.

Tex., Pearsall—Bottling.—Pearsall Bottling Works will erect bottling plant.

Tex., San Antonio—Paint, Roofing, etc.—W. E. Smith Mfg. Co., Cleveland, O., is reported as contemplating establishment of branch plant; will incorporate W. E. Smith Mfg. Co. of Texas; main office in Gunter Bldg.

Tex., San Antonio—Peanut Oil.—Geo. S. Fredell, Archt., San Antonio, will prepare plans for peanut-oil mill.

Tex., Sugar Land—Sulphuric Acid, etc.—Sugar Land Mfg. Co. advises Manufacturers Record: Main product will be sulphuric acid from sulphur mined by Freeport (Tex.) Sulphur Co.; purchased machinery, etc., for plant; total cost installation, \$150,000. (Lately noted inceptd. with \$300,000 capital to manufacture acid, etc.)

Virginia—Extracts.—Climax River Extract Co. inceptd. by Albert L. Lettermann, Arthur C. Ide and Francis E. Baldwin of Chicago.

Va., Alexandria—Paper and Paper Products.—Winco Co., capital \$50,000, inceptd.; Prest., M. A. Winter (Prest. M. A. Winter Co., Winter Bldg., 1435 U St. N. W.); Jas. A. Purcell, Secy.; Courtney P. Winter, Gen. Mgr.; all of Washington, D. C.

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Va., Claremont—Tidewater Mfg. Co., capital \$50,000, inceptd.; H. J. Arrington, Prest.; S. A. Oliver, Secy.-Treas.

Va., Culpeper—Trousers.—Culpeper Pants Co., capital \$20,000, inceptd.; H. C. Burrows, Prest.; A. L. Goodloe, Secy.; soon let contract to erect brick building.

Va., Richmond—Guns.—Clark Gun Co., capital \$15,000, inceptd.; W. Warrea Ritchie, Prest., High Gate, Va.; Wm. M. Mulligan, Secy.; H. D. Eichelberger, Treas., both of Richmond, Va.

Va., St. Paul—Tannic Acid.—Swift & Co., Chicago, will build plant to manufacture tannic acid extract; 180x48, 125x56 and 48x48-ft. factory buildings; also office building and pump-house; part mill and part reinforced concrete construction; asbestos-protected metal roof; electric-lighting equipment; cost of buildings \$40,000; let building contract to J. A. Jones, Charlotte, N. C., who has awarded all subcontracts. (Mentioned briefly in December.)

Va., Virso—Bottling.—Virso Christo-Cola Co., capital \$10,000, inceptd.; A. J. Britton, Prest.; C. O. Bruce, Secy.-Treas.

Va., Williamsburg—Explosives.—E. I. du Pont de Nemours & Co., Wilmington, Del., may build explosives-manufacturing plant; wires Manufacturers Record: Nothing definite about Williamsburg factory; plans too immature to discuss.

W. Va., Grafton—Fruit Jars, etc.—Hazel-Atlas Glass Co. acquired old Columbia Tile Co.'s plant and will remodel for manufacturing fruit jars, bottles, etc.

W. Va., Parkersburg—Polishes.—C. & V. Chemical Co., 316 4th St., organized; S. K. Creel, Prest.; L. O. Smith, V.-P. and Sales Mgr.; H. E. Varner, Secy., Treas. and Mgr.; has building; install mixing and grinding machinery to manufacture liquid and paste polishes and other specialties. (Lately noted.)

MOTORS AND GARAGES

Ala., Birmingham—Automobiles.—Alabama Auto Supply Co., capital \$5000, inceptd.; J. C. Lellich, Prest.; Earl Morrison, V.-P.; John Morrison, Treas.

Ala., Mobile—Automobiles.—Harrington Motor Co., capital \$19,500, inceptd.; C. W. Harrington, Prest.; H. J. Harrington, V.-P.; J. M. Oliver, Secy.-Treas.

Ala., Montgomery—Garage.—Leo Klein will expend \$10,000 to remodel building for garage (first floor) and apartments (second floor); plans by Frederick Ausfeld, Montgomery. (See Buildings Proposed—Apartments.)

Ark., Texarkana—Automobiles.—Texas Motor Co., capital \$25,000, inceptd. by J. K. Waddy, B. W. Anthony, R. E. Dove and H. Moore, Jr.

Fla., Jacksonville—Automobiles.—Florida Motors Corp., capital \$6000, inceptd.; R. H. Shackelford, Prest.; H. M. Harris, V.-P.; C. E. Belonte, Secy.-Treas.

La., Lake Charles—Garage.—W. R. Perkins, New Orleans, La., is having plans prepared for garage and lodge building; 2 stories; brick; cost \$15,000.

Md., Baltimore—Garage.—J. Wilson Leakin, 813 Fidelity Bldg., invites following contractors to estimate on erection of garage at 1307-1309 Cathedral St.: Benj. F. Bennett Building Co., 123 S. Howard St.; Chas. L. Stockhausen Co., Inc., National Marine Bank Bldg.; Price Concrete Construction Co., 25 St. Paul St.; Clarence E. Stubbs, Equitable Bldg.; John Hiltz & Sons, 7 Clay St.; Cogswell-Koether Co., 406 Park Ave.; J. J. Moylan, 117 E. Center St.; J. Henry Miller, Inc., Eutaw and Franklin Sts.; all of Baltimore; structure will be 4 stories; 60x130 ft.; mill construction; will be occupied by Autocar Sales & Service Co., 1311 Cathedral St.; Oliver B. Wight, Archt., Munsey Bldg., Baltimore. (Lately noted.)

N. C., Durham—Automobiles.—Durham-Carolina Motor Co., capital \$50,000, inceptd. by W. O. Williams and L. M. Williams of Durham and E. P. Yates of Winston-Salem, N. C.

N. C., Salisbury—Garage.—Lee Mahaley will erect garage and stables.

Okla., Marlow—Garage.—Mr. DeShazo has plans for brick garage.

Okla., Oklahoma City—Automobile Supplies and Bodies.—Sharp Motor Car Supply Co., 406 N. Broadway, is jobber in supplies and bodies; building for company will be erected. (Lately noted to erect building.)

Okla., Oklahoma City—Garage.—L. E. Butterick and Richard Selps plan to erect garage; 2 stories; frontage 100 ft.

Okla., Ringling—Garage.—W. W. Woodworth plans to erect garage.

Okla., Supply—Garage.—Levi G. Hurst plans to erect garage.

Okla., Watonga—Garage.—M. D. and Frank Herrington will erect garage; brick; 50x100 ft.

S. C., Bethune—G. B. King & Son let contract to W. W. Blair, Chester, S. C., to erect garage and store building; 70x50 ft.; 1 story; metal ceiling and plate-glass front in store; cement floor in garage; cost \$4000.

Tex., Abilene.—D. M. Oldham, Jr., Geo. Finberg, A. B. Webster and others will organize automobile company; extend building and construct brick addition.

Tex., Beaumont—Automobiles.—Beaumont Motor Car Co., capital \$15,000, inceptd. by Jas. G. Minter, Wm. L. Walker and H. P. Jirou.

Tex., Cameron—Garage.—P. C. Fahrendorf will erect garage and machine shop; fireproof 65x150-ft. building with gravel roof; cost \$7000.

Tex., San Angelo—Garage.—K. Aycock let contract Myers & Willike, San Angelo, to erect garage; 50x150 ft.; brick; plateglass front; cost \$5000.

Va., Charlottesville—Motorcycles.—Air-go Corp., capital \$50,000, chartered; R. C. Remick, Prest.; M. L. Remick, Secy.-Treas.

Tex., Dallas—Automobiles.—Frawley Motor Co., capital \$10,000, inceptd. by J. W. Frawley, Jr., Geo. T. Burgess, Earl M. Stapleton and L. S. Skelton.

Tex., San Angelo—Garage, etc.—K. A. Auto Supply Co. let contract Willike Bros. & Meyers, San Angelo, to construct 50x150-ft. 1-story brick fireproof building for automobile accessories and repairs; ground and building cost, \$10,500.

Va., Richmond—Garage.—Thos. L. Moore (of Warner Moore & Co.), 17th and Dock Sts., let contract to Moore & Harry, Richmond, to erect garage; mill and steel construction; about 45x140 ft.; cost \$15,000; plans by A. F. Hunt, Richmond. (Lately noted.)

W. Va., Oak Hill—Garage.—Oak Hill Garage Co., capital \$10,000, inceptd. by S. P. Cobb, J. S. Lewis, H. E. Jones and others.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ky., Cecilia.—Illinois Central R. R. A. S. Baldwin, Ch. Engr., Chicago, Ill., is reported to build coal chute.

ROAD AND STREET WORK

Ala., Bay Minette—Baldwin county will grade and otherwise improve road from Fairhope to Point Clear; \$7000 available; County Comms. receive bids until Mch. 20.

Ala., Birmingham—City Commission will lay asphalt and asphaltic concrete paving on 19th St., 7th Ave., 25th St., 21st St. and Humbolt Ave.; estimated cost \$35,000; Julian Kendrick, City Engr.

Ala., Birmingham—City Commission will pave 22d St. from 3d to 5th Aves. and portion of 15th Ave. S.; includes 2800 yds. sheet asphalt on 5-in. concrete base, 650 yds. asphaltic concrete on 5-in. base, 700 yds. concrete gutters, 250 yds. cement walk and 1000 ft. stone curb reset; estimated cost \$7000; bids opened Mch. 7; Julian Kendrick, City Engr.

Ala., Camden—Wilcox county will construct clay and sand or clay and gravel road from Snow Hill east to distance that will cost \$10,000, and from Snow Hill west to distance that will cost \$10,000, being about 8 mi. each way; also to construct similar road from Camden, Oak Hill and Pineapple Highway toward Boykin Bridge to distance that will cost \$2500, and from Boykin Bridge toward residence of D. H. Sharpe to distance that will cost \$2500; bids until Apr. 3; J. N. Stanford, Chrmn. County Comms.; Blair Hughes, County Rd. Suprv. (See Machinery Wanted—Road Construction.)

Ala., Tusculum.—City has \$60,000 (bonds) available for street improvements, schools and paying indebtedness. Address The Mayor.

Ark., Eldorado—City will open bids Mch. 21 on lately noted concrete and asphaltic concrete paving, with curb, grading and drainage; \$38,500 available; Engrs., Ford & MacCrea, Little Rock, Ark.; C. H. Murphy, R. N. Garrett and H. Wade, Comms. (See Machinery Wanted—Paving.)

Ark., Jonesboro.—Craighead county will construct 13 mi. asphalt road with gravel base and 3 mi. gravel road, with necessary bridges, culverts, etc.; road requires 67,000 cu. yds. excavation and is suited for use of tractor equipment; Comms., Road Dist. No. 1, John R. Turney, Secy., Courthouse, receives bids until Apr. 6; Lund & Hill, Engrs., Little Rock, Ark. (See Machinery Wanted—Road Construction.)

Ark., Little Rock.—Comms. Street Improvement Dist. No. 244, W. H. Mann, Secy., Little Rock, and Street Improvement Dist. No. 9, H. D. McCowan, Secy., Pulaski Heights, will grade, curb, gutter, drain and pave streets with either water-bound macadam, asphalt-surfaced macadam or concrete; 40,000 cu. yds. grading, 41,000 lin. ft. curbs and gutters; 55,000 sq. yds. paving; bids until Mch. 15; Dickinson & Watkins, Engrs., 610 State Bank Bldg., Little Rock. (See Machinery Wanted—Paving, etc.)

Fla., Key West.—Monroe County Comms., J. S. Curry, Jr., Commr., let contract to engineers to survey routes and estimate costs of roads on Key Largo, Metacumbe, Pine Key and on mainland to connect with Dade county Rd. and thence to Cape Sable; bond issue contemplated.

Fla., Kissimmee.—Osceola county, Third Comms.' Dist., will vote in April on \$250,000 bonds for road construction. Address County Comms.

Fla., Sebring.—City will construct about 30,000 sq. yds. sand-asphalt paving and 3 mi. concrete or granite curb; probably let contract in March; cost \$50,000; H. C. Brown, Mayor.

Fla., St. Petersburg.—City will pave 16 additional streets, including sections of 2d and 3d Aves. north from 25th to 31st St., and 7th Ave. south from 1st to 5th St.; M. W. Spencer, City Engr.

Fla., Tampa.—Hillsborough County Commissioners will construct 8½ mi. road; cost \$55,000.

Fla., Tampa.—Hillsborough County Commissioners contemplate improving Valrico Rd. from Hopewell Rd. south to Marvina Rd., intersecting Durant Rd.

Fla., Titusville.—Brevard county votes Mch. 11 on \$150,000 bonds to construct roads. Address County Comms.

Ga., College Park.—City will construct 1500 sq. yds. tile or cement walks on Cambridge Ave.; bids until Apr. 3; W. M. Alexander, Clerk. (See Machinery Wanted—Paving.)

Ky., Greenup.—Greenup county, A. J. Cochran, Clk., issued \$200,000 bonds to construct roads and bridges.

Ga., Lafayette.—Walker county will construct 2.35 mi. mountain road; convict labor; official in charge, Chas. Chamberlain, 802 James Bldg., Chattanooga, Tenn.

Ky., Hartford.—Ohio County Comms. contemplate construction 4 mi. road.

Ky., Hazard.—Perry County Fiscal Court, E. C. Duff, Jr., Judge, contemplates bond issue of \$250,000 to \$300,000 for road improvements and construction of roads.

Ky., Hazard.—City, W. M. Pursfull, Mayor, will improve streets and sidewalks. (See Machinery Wanted—Road-construction Materials.)

Ky., Henderson.—Henderson county votes Apr. 20 on \$400,000 bonds to construct roads. Address County Comms. (Lately noted.)

Ky., Hopkinsville.—Christian county will vote Mch. 19 on \$400,000 bonds; if vote is affirmative, will let contracts within 30 days or building 100 mi. road and 4 or 5 bridges. Address County Comms.

Ky., Lebanon.—Marion county contemplates voting on about \$300,000 bonds to construct roads. Address County Comms.

Ky., Louisville.—Board of Public Works let following contracts for street paving: Bickel Asphalt Paving Co. at \$597 to pave Deerwood Ave. from Schwartz to Morris Ave., and at \$19,006 Hill St. from 18th to 25th St.; Louisville Asphalt Co. at \$7135 to pave Stoll St. from Frankfort Ave. to L. & N. Ry. tracks, and at \$560 Brandeis St. from Preston St. to Flat Lick Rd.; all with asphalt; Hoke Construction Co. at \$4703 to pave with vitrified block State St. from Prospect St. to L. & N. Ry. tracks; all contractors of Louisville.

Ky., Marion.—Crittendon county votes May 27 on \$200,000 bonds to construct roads. Address County Comms.

Ky., Mayesville.—Mason County Fiscal Court will expend \$15,000 additional for road construction; this, with State appropriation of similar amount and regular annual appropriation, will total \$82,000 available this year for road construction; will also vote again on \$200,000 bond issue for road construction.

La., Amite.—Tangipahoa Parish Police Jury organized road district in Sixth Ward and order election to vote on \$110,000 bonds to construct roads.

La., Lake Providence.—East Carroll parish will vote on \$250,000 bonds to construct roads. Address Police Jury.

La., Mansfield.—De Soto County will vote on \$250,000 bonds to construct roads. Address Police Jury.

La., New Orleans.—City will construct subsurface drains, wooden curb, wooden headers and shell footwalks in connection with improvement of concession area at West End Lake Shore Park; A. G. Ricks, Commr., receives bids until Mch. 14. (See Machinery Wanted—Curbing, etc.)

Md., Baltimore.—City let following contracts for street paving: Patrick Flanagan & Sons, Harford Rd. and B. & O. R. R., at \$49,961.50 to pave with sheet asphalt Hollins St. from Calverton Rd. to Carrollton Ave., and Frederick Ave. from Bentalou to Gilmore St.; P. Reddington & Sons, 321 St. Paul St., at \$55,000 to pave Guilford Ave. from Lexington to Bath St., Ostend St. from Warner to Eutaw St., Eutaw St. from Ostend to Lee St., and sections of Uhler's alley, Sharp and Dallas Sts. (Call for bids lately noted.)

Md., Baltimore.—City will grade, curb and pave with sheet asphalt, vitrified brick and granite block, all on concrete base, sections of Cross, James, Ramsay, Scott, Gilmore and Hamburg Sts. and Wilkens Ave.; 53,900 sq. yds. sheet asphalt; 11,610 sq. yds. vitrified brick; 3430 sq. yds. granite block paving; 3150 sq. yds. granite block repaving; bids until Mch. 15; R. Keith Compton, Chmn. and Consult. Engr. Paving Com. (See Machinery Wanted—Paving.)

Md., Crisfield.—City contemplates bond issue to pave streets, etc. Address The Mayor. (See Water-works.)

Md., Easton.—Talbot county will construct 1½ mi. State-aid highway upon or along Calhoun Rd. from McDaniel Station to Calhoun; County Commrs., Jos. B. Harrington, Clerk, receive bids until Mch. 21; Frank W. Seth, County Roads Engr. (See Machinery Wanted—Road Construction.)

Miss., Columbus.—Lowndes county, Fourth Dist., let contract R. C. Searcy & Co. of Meridian, Miss., to construct 10 mi. macadam road, part of Jackson Highway; issued \$50,000 bonds; Gus E. Hauser, Jr., Consult. Engr. (Call for bids noted in Feb.)

Miss., Columbus.—Lowndes County Commissioners, Artesia Dist., will construct roads; issued \$30,000 bonds.

Miss., Gulfport.—Harrison County Supvrs. will construct boulevard between Henderson's Point to Pass Christian and Biloxi, 25 mi.; O. E. Hathaway, Government Engr., will submit report on various materials available.

Miss., Pascagoula.—Jackson County Supvrs. considering issuance of \$5,000 bonds to construct road from Pascagoula to Gautier.

Miss., Louisville.—Winston County Supvrs. will issue bonds (Townships 14 and 15) to construct roads.

Miss., Vicksburg.—City let contract Southern Paving & Construction Co., First National Bank Bldg., Chattanooga, Tenn., to pave portions of Catherine, Walnut and other streets; A. M. Paxton, City Clerk.

Mo., Kansas City.—City, Curtis E. Hill, City Engr., let contract E. D. Tyner Construction Co., 710 Midland Bldg., Kansas City, to construct 10,000 sq. yds. rock asphalt paving on concrete base; cost \$20,000.

Mo., St. Charles.—City, Chas. H. Kanstner, Clerk, contemplates construction 1 mi. brick street; cost \$15,000.

Mo., St. Charles.—St. Charles County Commrs. reported as contemplating vote on bonds to construct roads.

Mo., Mount Vernon.—Lawrence County, Buck Prairie Special Road Dist., is reported to have voted \$40,000 bonds to construct roads. Address County Commrs.

N. C., Brevard.—Transylvania county, Brevard township, is reported to vote on \$40,000 bonds to construct roads. Address County Commrs.

N. C., Elizabethton.—Bladen county contemplates construction 200 mi. road. Address County Commrs.

N. C., Pittsboro.—Chatham County Commissioners contemplate construction 40 mi. road.

N. C., Shelby.—City, J. T. Gardner, Mayor, contemplates construction 35,000 yds. asphalt or tarva streets. (See Water-works.)

N. C., West Asheville.—City will construct 33,000 sq. yds. paving on Haywood Rd.; consider brick, sheet asphalt, bitulithic and asphalt concrete; bids until Mch. 13; Chas. E. Waddell, Engr., 78 Patton Ave., Asheville. (See Machinery Wanted—Paving.)

Okla., Sapulpa.—Creek county, Lake township, voted \$10,000 bonds and Shennon township \$20,000 bonds to construct roads. Address County Commrs.

Tenn., Centerville.—Hickman county defeated \$200,000 bonds to construct roads. (Noted in Jan.)

Tenn., Dover.—Stewart County Commrs. contemplate construction 140 mi. road; cost \$200,000.

Tenn., Jamestown.—Fentress County Highway Commission let contract Solomon Contracting & Engineering Co., Harriman, Tenn., to construct 33½ mi. grading, drainage and macadamizing; \$150,000 available; W. I. Smith, Engr., Jamestown. (Bids noted in Jan. Bids were rejected on Jan. 18; relet Mch. 1.)

Tenn., Jackson.—City Com. will construct concrete walks in Court Square; J. L. Williams, City Engr., submitting estimates.

Tenn., Madisonville.—Monroe county votes \$325,000 bonds to macadamize about 80 mi. of road. Address County Commrs. (Noted in Jan.)

Tenn., Maynardville.—Union County Commissioners let contract Fred Maloney, Knoxville, at \$82,000 to construct several roads.

Tenn., Morristown.—Hamblen County Turnpike Commrs., W. D. Bushong, Chmn., ask bids until Apr. 1 on lately-noted construction; grading and macadamizing about 40 mi. highway and street improvements, including vitrified drain pipe, corrugated iron culvert pipe, concrete and stone masonry; Henry B. Havelly, Engr., Morristown. (See Machinery Wanted—Road and Street Construction.)

Tenn., Jacksboro.—Campbell county issued \$8000 bonds for road construction; A. B. Mahon, Jellico, Tenn., Secy. Board Commrs.

Tenn., Tazewell.—Claiborne county let contract to macadamize 29 mi. road to Colley & Sutherland, New Tazewell, Tenn.; Alex. E. Smith, Speedwell, Tenn., and Baumgardner & Sampson, Ben Hur, Va.

Tex., Austin.—City, P. W. Powell, Supt. Streets and Public Improvements, let contract to Texas Bitulithic Co., Austin, to construct two 20-ft. driveways with 30-ft. park between; 13,500 sq. yds. paving, 1300 ft. parking; \$36,000 available; M. C. Welborn, City Engr. (Lately noted.)

Tex., Belton.—Bell county, Salado precinct, voted \$8000 bonds to construct roads. Address County Commrs. (Noted in Jan.)

Tex., Brackettville.—Kenney county let contract W. H. Davis, San Antonio, Tex., at \$27,000 to construct Spofford-Brackett Rd. and concrete bridges.

Tex., Edna.—Jackson county, Dist. No. 1, will issue \$55,000 road bonds. Address County Commrs.

Tex., Ennis.—City will construct sewage-treatment plant; Briggs Reagor, City Secy., City Hall, receives bids until Mch. 10; plant consists of 2 Imhoff tanks and 3 Dunbar filter beds; total daily capacity 200,000 gals.; N. Werenskiold, Dallas, Tex., Consult. Engineer; G. G. Edwards, City Engr. (See Machinery Wanted—Sewage-disposal Plant.)

Tex., Falfurrias.—Brooks county votes Mch. 25 on \$30,000 bonds to construct 30-mi. road. Address County Commrs.

Tex., Greenville.—Hunt county, Precinct No. 6, is reported to vote on bonds to construct roads. Address County Commrs.

Tex., Madisonville.—Madison county defeated \$200,000 bonds to construct roads. (Lately noted.)

Tex., Mount Vernon.—Franklin county, Precinct No. 1, is reported to vote Mch. 23 on \$200,000 bonds to construct roads. Address County Commrs.

Tex., Pecos.—Reeves County Commrs. let contract W. E. Hamilton of Fort Stockton, Tex., at \$38,201 to grade and gravel 5 roads, comprising 21 mi. graveling and 40 mi. grading; also to build 10 concrete bridges; J. D. Merriwether, Engr. (Noted in February.)

Tex., Victoria.—Victoria County, Precinct No. 3, defeated \$3500 bonds to construct gravel roads. (Noted in Feb.)

Va., Culpeper.—Culpeper County Commrs. contemplate issuing bonds for road construction.

Va., Eastville.—Northampton county, Capeville Dist., will vote within about 30 days on \$20,000 bonds to construct about 22 mi. sand-clay roads; R. D. Stevenson, Chmn., and A. Preston Scott, Secy. Capeview Road Commissioners.

Va., Gloucester.—Gloucester county, A. T. Wiatt, Clerk, and State propose to construct 2 mi. road; cost about \$5000.

Va., Hamilton.—Town contemplates constructing 2 mi. macadam road; estimated cost \$8000. Address Town Clerk.

Va., Virginia Beach.—Chamber of Commerce let contract Ralph Johnson at \$1800 to build sand-clay road from 25th to 37th St.; 20 ft. wide; F. D. Henley, Div. Supt. of State Highway, will supervise construction.

W. Va., Beckley.—Raleigh county's bond election for road construction will be as follows: Trap Hill Dist., \$155,000; Shady Springs Dist., \$150,000; Slab Fork Dist., \$210,000; Town Dist., \$300,000; total, \$855,000. Address County Commrs. (Lately noted.)

W. Va., Beckley.—Raleigh county votes April 1 on \$855,000 bonds for road construction as follows: Town Dist., \$300,000; Trap Hill Dist., \$155,000; Shady Spring Dist., \$150,000; Slab Fork Dist., \$210,000. (Lately noted.)

W. Va., Fairmont.—Marion county, Pawpaw Dist., will vote Mch. 21 on \$360,000 bonds for road construction; A. G. Martin, County Clerk.

W. Va., Parkersburg.—City let following contracts to pave streets with vitrified brick and 4 streets with concrete: E. A. Freshwater & Sons, Chester, W. Va., at total \$37,737.90, to pave sections of Ann and 3d Sts. and Murdoch Ave.; C. Kennedy & Son, Parkersburg, at total \$28,570.83, to pave sections of Lynn, Mary, Park and George Sts.; all with vitrified brick; C. Kennedy & Son, Parkersburg, at total \$17,261.68, to pave sections of Covert, Latrobe, Swann and 14th Sts. with Atlas concrete; T. L. Higgs, City Engr. (Call for bids lately noted.)

W. Va., Ranson.—City, Walter Glalze, official, will expend \$2000 to grade and macadamize streets. (Noted in February.)

SEWER CONSTRUCTION

Ala., Camden.—City let contract to Sullivan, Long & Hagerty, Bessemer, Ala., to construct sewer system and water-works; Engr., Edgar B. Kay, Tuscaloosa, Ala.; noted in December. (See Water-works.)

Fla., Tampa.—City contemplates construction storm sewers to drain 45 acres in Fortuna Park, Watrous Pond and small portion of Suburb Beautiful; estimated cost \$12,340; R. D. Martin, City Engr.

Ky., Madisonville.—City, Jesse Weldon, Clk., will issue \$1300 bonds for sewer improvements.

La., DeRidder.—City let contract Sutherland Construction Co. of Kansas City at \$35,000 to construct sewer system; Xavier A. Kramer, Engr., Magnolia, Miss.; J. E. McMahon, Chmn. Sewerage Commission. (Call for bids noted in Feb.)

La., New Iberia.—City, H. S. Sealy, Mayor, voted \$90,000 bonds for sewer construction; X. A. Kramer, Engr., Magnolia, Miss. (Lately noted.)

Md., Crisfield.—City contemplates bond issue to construct sewer. Address The Mayor. (See Water-works.)

Miss., Tutwiler.—City has issued \$15,000 bonds for sewer system and water-works. Address The Mayor.

N. C., Nashville.—City, L. T. Vaghan, Clk., voted \$45,000 for electric-light, water and sewerage plants.

N. C., Shelby.—City, J. T. Gardner, Mayor, contemplates sewer extensions. (See Water-works.)

Tex., Anson.—City retained Henry Exall Elrod, Southwestern Life Bldg., Dallas, Tex., as engineer for sewer and sewage-disposal improvements.

Tex., Coleman.—City will improve sewer system at cost several thousand dollars. Address The Mayor.

Tex., Winnsboro.—City will soon receive bids to construct sewer system and extend water mains; Wm. E. Stevenson, City Engr. (City lately noted to have issued \$25,000 warrants to construct sewer system and extend water mains.)

W. Va., Philippi.—Barbour county, Barker Dist., is reported to vote about April 11 on \$130,000 bonds to construct roads. Address County Commrs.

TELEPHONE SYSTEMS

Ky., Cooper.—Sumpter Telephone Co. incorporated by B. S. Huffacker, Jas. Goddard and Jesse Frost.

Ky., Reed.—Reed Rural Telephone Co., capital \$1000, inceptd. by Frank Roberts, G. E. Mitchell and P. V. Smith.

Miss., Isola.—Isola Telephone Co., capital \$1200, inceptd. by E. E. Barr, F. R. Green and others.

Va., Alexandria.—Southern Ry. Co., H. W. Miller, V.-P., will construct 2 telephone circuits between Alexandria and Monroe, Va., 160 mi.; construction of wires and installation of station equipment by company's force, under direction of W. H. Potter, Supt. of Telegraph; commence work as soon as material is secured. (Lately noted.)

Va., Unionville.—Unionville Telephone Co. organized with L. D. Walker, Prest., Unionville; L. A. Rhoades, V.-P., Raccoon Ford, Va.; G. M. Vaughn, Secy., Treas. and Gen. Mgr., Everona, Va.; plans to construct telephone system from Orange to Raccoon Ford and from Unionville to Mine Run, 26 mi.

TEXTILE MILLS

Ala., Uniontown.—Cotton Linters.—Farmers' Cotton Oil & Trading Co. may install equipment to manufacture bleached cottonseed linters. (See Machinery Wanted—Cotton Linters Machinery.)

Md., Elkton.—Knit Goods.—Eagle Knitting Mills, capital \$5000, chartered by Clement M. Egner and others.

Miss., Tupelo.—Fiber Products.—Tupelo Fiber Co., capital \$50,000, inceptd. by J. A. Knox, A. C. Beane and others; to manufacture fiber products.

N. C., Beaufort.—Knit Goods.—Orion Knitting Mill will install additional new machinery.

N. C., Cerro Gordo.—Hosiery.—Cerro Gordo Hosiery Mills Co., capital \$10,000, organized by J. H. Williamson (Prest., Cerro Gordo Warehouse Co.), D. G. Nance and others; has 150x70-ft. brick building; will install 10 hosiery knitting machines; steam or oil power plant; Cerro Gordo Warehouse Co. lately noted planning knitting mill. (See Machinery Wanted—Knitting Machinery.)

N. C., Goldsboro.—Hosiery.—Durham Hosiery Mills, Durham, N. C., write Manufacturers Record: Contemplate building finishing-room at Mill No. 5.

N. C., Landis.—Cotton Yarn.—Linn Mills Co. will expend \$10,000 (not \$100,000 as lately stated by error) to build additions; plans provide for 100x100 and 100x12-ft. brick additions, 3576 spindles, electric-power drive, etc.

N. C., Salisbury.—Cotton Goods.—Kaiser Mfg. Co. will erect brick addition 128x150 ft. feet.

S. C., Spartanburg.—Hosiery.—Star Hosiery Mills let contract J. F. Gallivan Building Co., Greenville, S. C., to erect knitting mill; 2 stories; 50x120 ft.; brick; install 150 knitters, etc.; erect dye plant and boiler-house; daily capacity 1000 doz. prs. hose; J. E. Sirrine, Archt.-Engr., Greenville, S. C. (Lately noted inceptd. with \$100,000 capital.)

Tex., Fort Worth.—Knit Goods.—Free Will Baptist Mission, G. C. Morris, Mgr., 1330 S. Main St., will establish knitting mill to manufacture socks, etc.; cost \$5000.

Tex., Gainesville.—Woolen Goods.—Edgar Van Slyke and others reported to build wool mill costing \$15,000 to \$20,000.

Va., Norfolk.—Hosiery and Underwear.—Norfolk Hosiery & Underwear Mills Co., capital \$100,000, inceptd.; Jos. B. Heidt, Prest.; C. J. Dey, V.-P.; Morton Heidt, Secy.-Treas.

Va., Waynesboro.—Knit Underwear.—L. Mehler and others will form company to establish underwear knitting mill; have building; install 10 knitters and accompanying machinery. (See Machinery Wanted—Knitting Equipment.)

WATER-WORKS

Ala., Camden.—City let contract to Sullivan, Long & Hagerty, Bessemer, Ala., to construct water-works and sewer system; for furnishing steel tower and 50,000-gal. steel tank to J. S. Schofield's Sons Co., Macon, Ga.; for oil engine, direct connected to 80-gal. duplex pump and compressor, Fairbanks, Morse & Co., New Orleans; Edgar B. Kay, Engr., Tuscaloosa, Ala. (Noted in December.)

Ga., McRae.—City let contract Steel Products Co. of Savannah, Ga., to construct water-works.

Ga., Summerville.—City is having plans prepared by J. B. McCrary Co., Atlanta, for water-works.

Ky., Louisville.—Louisville Water Co. plans to expend \$647,000 for improvements during 1916 as follows: 36-inch distributing main, C. H. reservoir to Bardstown road, \$100,000; new river station with one 30,000,000-gallon pump, \$355,000; wash-water pump, Crescent Hill filters, \$10,000; painting and repairing river pumping station No. 1, \$2000.

Ky., Paintsville.—City is reported as contemplating election to vote on bonds to construct water-works. Address The Mayor.

Ky., Paris.—City contemplates purchase of plant of Paris Water Co. or construction of plant; employed Edgar B. Kay, Tuscaloosa, Ala., as Consult. Engr. to report on cost of municipal plant.

Ky., Sturgis.—City contemplates constructing water-works. Address The Mayor.

Ky., Winchester.—City retained Edgar B. Kay, Tuscaloosa, Ala., to prepare plans and supervise construction of water-works; Kentucky River source of supply; estimated cost \$150,000.

La., DeRidder.—City let contract DeJercy & Naff of Opelousas, La., to construct water pipe line; issued \$25,000 bonds, of which \$2000 were expended to acquire old water system.

and remainder will be used for enlargement and extension; by Xavier A. Kramer, Engr., Magnolia, Miss.; J. M. Cox, Mayor. (Noted in Feb.)

Md., Crisfield.—City contemplates bond issue to construct water and sewer systems, pave streets and improve fire department. Address The Mayor.

Miss., Tutwiler.—City has issued \$15,000 bonds for water-works and sewer system. Address The Mayor.

Mo., Deepwater.—City is reported as contemplating construction of water-works. Address The Mayor.

Mo., Kirksville.—City votes Apr. 4 on \$100,000 bonds to improve water-works and street-lighting system. Address The Mayor. (Noted in January.)

Mo., Webster Groves.—City, R. L. Wilson, Clerk, will vote Mch. 25 on \$17,000 bonds for water-works extension—mains, fire pumps, etc.; also vote on \$15,000 fire-department bonds.

N. C., Nashville.—City voted \$45,000 bonds for water-works, sewers and electric lighting; L. T. Vaughan, Clk.

N. C., Shelby.—City, J. T. Gardner, Mayor, contemplates expending \$3000 to \$5000 on water-works and sewer extensions; also constructing 35,000 yds. asphalt or tarvin streets.

Okla., Cleveland.—City votes Mch. 15 on \$100,000 bonds to construct water-works. Address The Mayor.

Okla., Clinton.—City will construct water-works; cost \$150,000; Benham Engineering Co. Consult. Engr., Oklahoma City.

Okla., Coyle.—City contemplates constructing water-works and electric-light plant. Address The Mayor.

Okla., Fort Cobb.—City contemplates constructing water-works and electric-light plant. Address The Mayor.

Okla., Pauls Valley.—City Council authorized \$16,000 bond issue to improve water-works; T. L. Kendall, Mayor.

Okla., Perry.—City contemplates voting on bonds to improve water-works. Address The Mayor.

Okla., Stroud.—City contemplates improving water-works. Address The Mayor.

Okla., Stratford.—City voted \$35,000 bonds for water-works and electric-light plant. Address The Mayor.

Tenn., Russellville.—Thomason Bros. will build concrete reservoir.

Tex., Beeville.—Texas Southern Electric Co. is erecting brick pumping station to be equipped with automatic pumps; ordered steel reservoirs. (See Electric Plants.)

Tex., Crowell.—City is reported to vote on bonds to construct water-works. Address The Mayor.

Tex., Dallas.—Electrified Water Co. organized to construct water-works; E. W. Rose is interested.

Tex., Toyah.—City is having plans prepared for water-works. Address The Mayor.

Tex., Van Alstyne.—City issued \$3200 water-works bonds. Address The Mayor.

Tex., Willsboro.—City will soon receive bids to extend water-works and construct sewer system; Wm. E. Stevenson, City Engr. (City lately noted to have issued \$25,000 warrants to extend water mains and construct sewer system.)

W. Va., Hamlin.—City contemplates installation of water-works. Address The Mayor.

WOODWORKING PLANTS

Ala., Bay Minette.—Doors, Windows, etc.—Alabama Mfg. Co., W. S. Crockett, Mgr., and O. G. Shollar, contractor, have consolidated as Crockett & Shollar; will enlarge plant of Alabama Mfg. Co. and install additional machinery; new factory to be 2 stories.

Ala., Blount Springs.—Staves and Heading.—Blount Springs Co. contemplates installation stove and heading mill. (See Machinery Wanted—Woodworking (Stave and Heading) Machinery.)

Ala., Trafford.—Heading.—Trafford Heading Co., C. E. Murray, owner, Decherd, Tenn., will erect \$250 building; equip to manufacture pine heading; construction by the company; purchased equipment, cost \$4000. (See Machinery Wanted—Saws.)

Ark., White Hall.—Cooperage.—White Hall Cooperage Co., capital \$6000, incptd.

Fla., Aycock.—Wood-brick Veneer.—Aycock Wood Brick Veneer Co., capital \$500,000, incptd. by T. J. Aycock of Aycock, A. A. Myers, Jr., Chipley, Fla., and W. E. Aycock, Moultrie, Ga.

Md., Baltimore.—Sash, Doors and Blinds.—Wm. C. Scherer & Co., 508-520 W. Baltimore St., incptd. with \$100,000 capital by Hermann

J. Hughes, Wm. H. Hudgins and Jos. England.

N. C., High Point.—Coffins and Caskets.—Rankin Coffin & Casket Co. will rebuild plant noted burned; 50x120 ft., 2-story, frame, metal-clad building, costing \$3000; receive building proposals; install machinery to manufacture coffins and caskets; may install but partial equipment at present; yearly capacity, 75,000. (See Machinery Wanted—Woodworking Machinery.)

N. C., Winston-Salem.—Coffins.—Turner-White Coffin Co. will erect \$10,000 building.

N. C., Winston-Salem.—Furniture.—Huntley Furniture Co. will build addition; 4 stories; 73x150 ft.; construction by company.

Tex., Houston.—Boxes.—Republic Box Co. of Texas increased capital from \$10,000 to \$25,000.

Va., Roanoke.—Spokes, Handles, etc.—Roanoke Spoke & Handle Co., capital \$50,000, incptd.; Jas. P. Garrett, Pres.; Jas. P. Garrett, Jr., Secy. and V.-P.; M. W. Cutshall, Mgr.; has building and equipment; daily capacity 3500 spokes, 200 doz. handles; also manufacture baseball bats; may add boiler. (See Machinery Wanted—Boiler.)

FIRE DAMAGE

Ala., Hamilton.—Albert J. Hamilton's gin; loss \$1800.

Ala., Opp.—Holland House.

Ala., Ozark.—Residences of J. R. Levy and John Q. Adams; loss \$7500.

Ark., Jonesboro.—Mrs. Mary Starugo's residence; loss \$5000.

Ark., Marianna.—Mrs. Frank Varlie's residence.

Fla., Erin, P. O. at Tarpon Springs.—Lumber mill owned by F. E. Muller of St. Petersburg, Fla.

Fla., Port Tampa City.—Yates Furniture Factory.

Fla., Rockledge.—Hotel Indian River's power plant; loss several thousand dollars.

Fla., Winter Haven.—W. M. Matchett's store; Barnes Feed Co.'s store; R. A. Lewis' store; D. M. Stanford's store; loss \$15,000.

Ga., Adel.—Residences of Mrs. M. L. Wright and R. T. Parsons; loss \$12,000.

Ga., Crawfordville.—Planters' Warehouse, owned by Mrs. L. F. Stephens, Thomson, Ga.

Ga., Leslie.—Americus Oil Co.'s seedhouse; Southern Cotton Oil Co.'s 2 seedhouses.

Ky., Adairville.—Mrs. M. E. Robertson & Co.'s store, loss \$10,000; Enterprise Publishing Co.'s plant, loss \$20,000.

Ky., Brandenburg.—Richardson Arcade; loss \$14,500; Meade County Messenger's plant; Mrs. Chas. Casper's building, loss \$5000; total loss \$75,000.

Ky., Carlisle.—Firman B. Henry's residence on Market St.; Ratliff Bros. Co.'s warehouse.

Ky., Flemingsburg.—Colored school; loss \$1000. Address The Mayor.

Ky., Glasgow.—Bryan Dry Goods Co.'s store; loss \$15,000.

Ky., Hardin.—Foster Padgett's residence.

Ky., Henderson.—Busy Bee Candy Kitchen, building owned by Jos. Cohen, loss \$12,000; Ohio Valley Bank building, loss \$3000.

Ky., Louisa.—Felix M. See's residence on Lick Creek.

Ky., Louisville.—J. H. Loeser's garage at 4811 Southern Parkway; loss \$7000.

Ky., Winchester.—Farmers' Tobacco Warehouse Co.'s warehouse; loss \$25,000.

La., Myrtle.—Southern Lumber Co.'s mill; loss \$75,000.

La., New Orleans.—Dr. Armand Mary's residence at 1437 Moss St.; loss \$7000.

Md., Gardenville.—Building on Belair Rd. near Southern Ave., owned by Truckers and Gardeners' Society, garage and shed; loss \$6000.

Md., Northeast.—Wm. Rutter's barn and outbuildings; loss \$3500.

Miss., Greenville.—Negro King's Daughters' Hospital; loss \$5000.

Miss., Okolona.—B. L. Blough's grist mill and blacksmith shop; loss \$8000.

Miss., Quitman.—T. J. Bolster's residence; loss \$5000.

Miss., Natchez.—Residence on Cottonwood plantation near Wildsville, owned by Chevy Chase Land Co.; loss \$10,000.

Miss., Union.—J. R. Buckwalter's building containing Union Hotel, Union Grocery Store, etc.; loss \$20,000.

Miss., New Albany.—Stephenson Livery Co.'s stable; K. L. Smith's store; Shannon

Jewelry Co.'s store; Southwestern Telephone Co.'s exchange; Parks Mercantile Co.'s store; R. L. Goodwin's office; total loss \$50,000.

Mo., Cottleville.—Louis Merx's hotel.

Mo., Harrisonville.—Christian Church; loss \$10,000. Address The Pastor.

Mo., St. Charles.—Paul Leistner & Sons' machine shop; loss \$1800 to \$2000.

Mo., St. Louis.—Building at 1112-18 Market St., occupied by Hornet Mantel Co. and Kraushaar Brass Co.; loss \$20,000.

N. C., High Point.—Rankin Coffin & Casket Co.'s machinery-room, engine and boiler-room and drykiln; loss \$10,000.

N. C., Wilmington.—Tidewater Power Co.'s carbarn, machine and paint shops and several street cars; loss \$50,000.

N. C., Mocksville.—Davie County Court-house; loss \$30,000. Address County Commrs.

N. C., Mt. Olive.—John Goodson's residence; loss \$3000 to \$4000.

Okla., Guthrie.—Rucker-Burton Mercantile Co.'s store; loss on building, owned by W. F. Sultz, several thousand dollars.

S. C., Lexington.—Corley Bros.' sawmill.

S. C., Moore.—Charleston & Western Carolina Ry.'s passenger and freight depot; A. W. Anderson, Gen. Mgr., Augusta, Ga.

S. C., Summerville.—Mrs. Henry Young's residence.

Tenn., Madisonville.—Methodist Episcopal church; loss \$3000; Rev. J. L. Bachman, pastor.

Tenn., Morristown.—Read's Theater, owned

by Mrs. J. S. Read, Knoxville, Tenn.; loss \$17,000 to \$18,000.

Tenn., Nashville.—Three bungalows, owned by W. F. Trousdale, Spencer Akin and J. E. Long; loss \$5000 each.

Tex., Brandon.—G. L. White's cotton gin; loss \$10,000.

Tex., Dallas.—Mrs. E. G. Gebhart's residence at 5214 Ross Ave., loss \$10,500; W. G. McCommas' residence, 5308 Ross Ave., loss \$3750; M. Newman's residence, loss \$3900.

Tex., Fort Worth.—F. M. Larue's apartment-house at 1600 N. Ballinger St.; loss \$3000.

Tex., Tioga.—J. F. Rogers' residence; loss \$8000.

Tex., Waco.—Mrs. A. M. Prescott's residence; loss several thousand dollars.

Tex., Waco.—W. L. Edmond's residence at 1401 Morrow St.; loss \$10,000.

Tex., Waxahachie.—Mrs. Bettie Dobson's residence.

Tex., Wylie.—D. A. Waters' bakery; building owned by Dr. G. P. Maynard.

Va., Charlottesville.—Edmund Twoby's residence "Edge Hill."

Va., Galax.—Fred McKinney's cottage.

W. Va., Beechwood.—Clarence Stevens' residence, owned by John T. Cooper.

W. Va., Iager.—Norfolk & Western R. R.'s depot, J. E. Crawford, Ch. Engr., Roanoke, Va.; Iager Drug Co.; E. H. Jennings' store; total loss \$40,000.

W. Va., Wheeling.—H. L. White's store; loss \$50,000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ala., Montgomery.—Leo Klein has plans by Frederick Ausfeld, Bell Bldg., Montgomery, for alterations and additions to building on Lee St. for garage and apartment building; 71x150 ft.; ordinary construction; tar and gravel roof; gas heating; electric lighting; cost \$10,000. Address owner. (Lately noted under Stores.)

D. C., Washington.—I. Kriksteine has plans by Matthews G. Lepley, 1406 G St. N. W., for apartment-house at 1039 Fairmont St. N. W.; cost \$8000; construction by owner.

D. C., Washington.—Dr. J. B. Bayne has plans by Clark Waggaman, 1211 Connecticut Ave. N. W., Washington, for three-story brick apartment-house at 1752-56 M St. N. W.; cost \$27,500.

D. C., Washington.—Fulton R. Gordon has plans by M. G. Lepley, 1406 G St. N. W., Washington, for apartment-house at 1421 Irving St. N. W.; brick; fireproof; cost \$25,000.

D. C., Washington.—John L. Barr has plans by R. Stanley Simmons, 1340 New York Ave. N. W., Washington, for \$250,000 apartment-house at 19th St. and Wyoming Ave.; 100x127 ft.; 7 stories; 45 suites; fireproof; brick; stone trimmings.

D. C., Washington.—A. B. Mullett & Co., Union Trust Bldg., Washington, prepared plans for store and apartment building. (See Stores.)

D. C., Washington.—Harry Wardman, 1430 K St. N. W., has plans by A. M. Schneider & Co., same address, for apartment-house at 17th and Church Sts.; six stories; 95 suites; tapestry brick; Indiana limestone trimmings; 95x205 ft.; completion by Oct. 1; cost \$250,000. (Lately noted.)

Fla., Fort Myers.—Mrs. Joe Green will erect business and apartment building. (See Stores.)

Fla., Miami.—J. F. Olmstead will erect apartment-house in Fort Dallas Park; 3 stories; 12 suites; reinforced concrete; fireproof; cost \$18,000.

Fla., Tarpon Springs.—Welsh Development Co. and others contemplate erecting 8 to 10 apartment building; 2 stories; 2-room-and-bath suites; plans in progress. (A. E. Welsh and others lately noted organizing company to erect apartment-house.)

La., Shreveport.—A. Currie will erect 12 tenement-houses; 16x40 ft.; fireproof; rubberoid roof; Garson Bros., Archts.

Mo., St. Louis.—Victor Rhodes will erect apartment-house at 711 E. Gate St.; cost \$17,000.

Mo., St. Louis.—Elroy Realty Co. will erect apartment house on Berlin Ave. near Laurel Ave.; six suites; garage in rear; cost \$25,000.

Mo., St. Louis.—J. Robison will erect three 2-story flats; cost \$18,000.

Mo., St. Louis.—Louis Rosen will erect apartment-house; cost \$23,000.

Mo., St. Louis.—Warnham Investment Co. will erect 2 apartment-houses at 3993-95 Shaw Ave.; cost \$22,000.

Mo., St. Louis.—Alphonse Richard will erect 2 flats; cost \$14,000.

Mo., St. Louis.—Francis & Wyland will erect 42-family apartment-house; cost \$50,000.

Mo., St. Louis.—John Horan will erect apartment-house; cost \$15,000.

Mo., St. Louis.—Catherine Howell will erect store and flat building. (See Stores.)

Mo., St. Louis.—Gladine Bass will erect 2 single flats at 5244-54 Neosho St.; cost \$10,500.

N. C., Winston-Salem.—A. P. Grizzard is having plans prepared by Humphreys, Faw & Knapp, Winston-Salem, for store and apartment building on S. Main St.; 4 stories; lower floor for store, 26x35 ft.; upper floors, apartment; steam heat; gas and electric lights; hot and cold water; cost \$8000.

Okla., Tulsa.—M. J. Glass has plans by Chas. A. MacDonald, Tulsa, for Library Apartments; California style; 38x36 ft.; 24 suites; lobby finished in enamel tile; steam heat; gas and electric lighting.

Okla., Woodward.—G. J. Cannon & Co., Enid, Okla., are preparing plans for apartment building; cost \$40,000; owner's name withheld.

Tex., Houston.—P. S. Griffith has plans by F. J. Maret, Houston, for apartment-house; 3 stories; cost \$40,000. (Lately noted.)

Va., Hopewell.—Hopewell Terrace Co., Walter Sachs, Pres., is reported considering erection of 3 apartment-houses to contain 150 rooms; also to erect clubhouse.

W. Va., Logan.—Ben Tobin, Propr. of German Restaurant, is having plans prepared for building, probably to contain apartments. (See Miscellaneous.)

ASSOCIATION AND FRATERNAL

Ga., Moultrie.—Y. M. C. A. plans to erect \$30,000 building.

Ga., Thomasville.—W. J. Upchurch and Homer Williams are having plans prepared by C. Frank Galliber, Montgomery, Ala., for building for stores, offices and Masonic lodge; 5 stories; 62x100 ft.; pressed brick, stone and terra-cotta, plate and prism glass; passenger elevator; steam heat; plans out in about 30 days. (A. F. & A. M. lately noted to erect building.)

Miss., Columbus.—Columbus Lodge No. 12, K. of P. will erect castle hall.

Miss., Laurel.—Knights of Pythias will erect building; brick; lower floor for two stores; upper floor lodgerooms.

Mo., Webb City.—Modern Woodmen of America will erect \$5000 building.

N. C., Edgemont.—T. A. Clark is having plans prepared for lodge and business building. (See Stores.)

Okla., Cheyenne.—L. O. O. F. will erect business and lodge building; 2 stories; brick.

S. C., St. Matthews.—Izlar Lodge, A. F. and A. M., plans to organize company to erect lodge building; \$10,000 capital; 3 stories; lower floor for stores, second floor offices and third lodgerooms.

Tex., Beaumont.—Curley Pine Camp, Woodmen of the World, contemplates erecting store and lodge building; 2 stories; brick; fireproof; cost \$30,000.

Tex., El Paso.—Y. W. C. A. plans to erect dormitory and office building; Miss Gail Lane, Secy.

Tex., El Paso.—Scottish Rite Masons are having plans prepared by Hubbell & Greene, Dallas, for cathedral at Upson Ave. and Santa Fe St.

Tex., El Paso.—A. F. & A. M. are having plans prepared by Hubbell & Greene, Dallas, for \$200,000 Scottish Rite Cathedral; Italian renaissance; fireproof. (Previously noted.)

Tex., Wichita Falls.—G. W. Filgo will erect store and lodge building. (See Stores.)

W. Va., Lewisburg.—Greenbrier Lodge No. 42, A. F. & A. M. has plans by H. Rus Warner, Charleston, W. Va., for Masonic Temple; 50x89 ft.; brick; asbestos roof; oak flooring; steam heat; city lighting; cost \$15,000; bids opened about May 1. Address Jno. C. Dice, Secy., Lewisburg.

BANK AND OFFICE

Ark., Tuckerman.—Jackson County Realty Co. will erect store and office building. (See Stores.)

Ga., Griffin.—H. V. Kell Co. will erect warehouse and office building. (See Warehouses.)

Ga., Thomasville.—W. J. Upchurch and Homer Williams will erect store, office and Masonic building. (See Association and Fraternal.)

Ga., Tifton.—Bank of Tifton is having plans prepared by Edwards & Sayward, 633 Candler Bldg., Atlanta, Ga., for bank building; plans ready for contractors about Apr. 1; cost \$35,000. (Previously noted.)

Ky., Danville.—Samuel Lyons, W. O. McIntyre and others are reported having plans prepared by W. S. Van Dalsen, Danville, for building; 5 stories; brick, steel, reinforced concrete and terra-cotta.

Ky., Hickman.—Hickman Bank & Trust Co. will erect bank building.

N. C., Winston-Salem.—Maline Mills is having plans prepared by Northup & O'Brien, Winston-Salem, for office building; 52x50 ft.; brick; colonial design; composition roof; cost \$4500.

Okla., Enid.—G. J. Cannon & Co., Enid, are preparing plans for \$15,000 bank building.

Okla., Oklahoma City.—Kansas City Life Insurance Co., Kansas City, Mo., is reported to erect business and office building.

Okla., Oklahoma City.—W. T. Hale is reported to erect 10-story office building at Main and Harvey Sts.

S. C., Matthews.—Izlar Lodge, A. F. and A. M., plans to erect building for offices, etc. (See Association and Fraternal.)

Tenn., Carthage.—Smith Co. Bank will erect building to replace burned structure; 32x34 ft.; two stories; hot-air heat.

Tenn., Clarksville.—W. M. Daniel, Sr., will erect building for First Trust & Savings Bank.

Tenn., Jonesboro.—Bank & Trust Co. will remodel building; C. G. Mitchell, Archt., Johnson City, Tenn.

Tex., Clyde.—R. J. Estes will erect building for Clyde Natl. Bank.

Tex., Ennis.—Ennis Natl. Bank, Phelps Terry, V-P., will erect bank building; fireproof; cost \$20,000.

Va., Richmond.—Woodward & Son will erect warehouse and office building. (See Warehouses.)

Va., Richmond.—Legislative Comm. selected Carneal & Johnston, Richmond, as architects for office building annex to State Library. (See Govt. and State.)

W. Va., Martinsburg.—People's Trust Co. will remodel and enlarge banking-room.

W. Va., Wheeling.—Security Trust Co. abandoned plan to erect 10-story structure and will erect building for banking purposes only; Edw. B. Franzheim and F. F. Farris, Asso. Archts., Wheeling. (Lately noted.)

CHURCHES

Ark., Heber Springs.—Baptist church will erect building; cost \$15,000. Address The Pastor.

Fla., Fruitland Park.—Baptist church will erect building. Address The Pastor.

Ga., Atlanta.—All Saints' Episcopal Church, Rev. W. W. Mimlinger, rector, has bequest erect Sunday-school room, parish-house, etc.; cost \$50,000 to \$75,000; Morgan & Dillon, Archts., Atlanta.

Ga., Milledgeville.—Baptist church will erect Sunday-school addition; cost \$10,000; Rev. Harold Major, pastor.

Ky., Lexington.—Broadway Christian Church, Rev. Mark Collis, Pastor, will rebuild structure lately damaged by fire; loss \$50,000; R. H. Crossfield, Dr. Jas. C. Carrick, John T. Vance and others, Com.

La., Leesville.—Methodist Church will remove church building to another site and expend \$6000 for repairs; G. R. and W. K. Ferguson, Claude Edwards and others, Com.

Md., Baltimore.—Church of Blessed Sacrament is having plans prepared by J. E. Moxley, 531 N. Calhoun St., Baltimore, for parish-house on Spring Hill Ave. near Old York Rd.; 2 stories; frame; 32x30 ft.

Mo., Perryville.—Church of the Assumption will erect parochial school; 2 stories; fireproof; cost \$20,000. Address The Pastor.

N. C., Charlotte.—First Reformed Church will erect building. Address The Pastor.

N. C., Collinston.—Presbyterian church, Rev. C. W. Erwin, pastor, Brim, N. C., will erect building.

Okla., McAlester.—Methodist Church will erect \$40,000 building. Address The Pastor.

Okla., Henryetta.—Baptist Church will erect building; 50x90 ft.; brick; cost \$16,000. Address The Pastor.

S. C., Cayce.—Methodist church, Rev. D. H. Attaway, Pastor, will erect building; cost about \$3000; plans by the Pastor. (Lately noted.)

S. C., Enoree.—Cedar Shoals Baptist Church will erect building. Address The Pastor.

S. C., Kershaw.—Baptist church, Rev. J. Powell Tucker, Pastor, will rebuild burned structure; auditorium to seat 800; Sunday school, 350; cost \$18,000 to \$28,000. Address T. J. Gregory, Kershaw. (Lately noted burned.)

S. C., McColl.—Baptist church will erect building; brick; 18 Sunday-school rooms; cost \$20,000. Address The Pastor.

S. C., North Augusta.—Baptist Church contemplates erecting Sunday-school addition to cost \$6000, including heating plant; also will possibly install pipe organ in church. W. C. Allen is interested.

S. C., Rock Hill.—Baptist church has plans by Hook & Rogers, Charlotte, N. C., for building; cost \$90,000.

Tenn., Jackson.—Catholic church will erect negro mission; 3 stories; brick; cost \$10,000. Address The Pastor.

Tex., Alpine.—Baptist church, Rev. Jas. T. Taritt, pastor, receives bids until Feb. 15 to erect building; plans by J. E. Greene, 608 American Trust Bldg., Birmingham, Ala., call for building 70x70 ft.; ordinary construction; red-tile roof; hot-air heat; electric light; cost \$13,000. (Lately noted.)

Tex., Houston.—Woodland Heights Baptist congregation plans to erect building; Rev. Thornton A. Payne may probably be able to give information.

Tex., Quanah.—First Methodist Church, Rev. Simeon Shaw, Jr., pastor, will erect building; cost \$25,000; is considering plans.

Tex., Lubbock.—A. M. Rice, Amarillo, Tex., is preparing plans for church building; will let contract at once.

Va., Catawba.—Catawba Sanatorium will erect chapel; cost \$4500.

Va., Norfolk.—Ghent M. E. Church, Rev. G. C. Kelly, pastor, plans to erect building; cost \$75,000 to \$100,000.

W. Va., Moundsville.—Catholic church will erect building at 7th St. and Jefferson Ave.; cost about \$40,000. Address The Pastor.

W. Va., Williamson.—Methodist church will erect \$20,000 building; plans and specifications ready for bidders about April 10. Address Dr. W. S. Rosenheim. (See Machinery Wanted — Building Materials; Roofing; Brick; Metal Laths; Heating Plant; Lighting System; Stained Windows; Metal Window Frames; Church Equipment.)

CITY AND COUNTY

Ga., Cuthbert.—Library.—City is having plans prepared by P. E. Dennis, American National Bank Bldg., Macon, Ga., for library; brick and stone; cream press brick; metal roof; tile floors; cost \$7500.

Ga., Rome.—Auditorium.—City voted \$40,000 bonds to complete and equip municipal auditorium; W. M. Gammon and Hugh McCrary, Com. (Previously noted.)

La., New Orleans.—Office.—Sewerage and Water Board, 508 City Hall Annex, receives bids until Apr. 26 to erect office building; 6 stories; terra-cotta and press-brick exterior; steel casement windows; 2 elevators; fireproof vaults; automatic sprinkler system; plans and specifications at office of Board as above; Toledano, Wogan & Bernard, Archts., Perrin Bldg., New Orleans, and Contractors and Dealers' Exchange. (Previously noted.)

Miss., Dio-Jail.—Town will erect concrete jail. Address Town Clerk.

N. C., Rocky Mount.—Fire Station.—City will expend \$12,000 to remodel and enlarge north wing of municipal building for fire department, etc. Address The Mayor.

Okla., Bartlesville.—Bathhouse and Shelterhouse.—City has plans by W. H. Dunn, Republic Bldg., Kansas City, for bathhouse and shelterhouse in park; ordinary construction; shingle roof; cost \$10,000; date of opening bids not decided.

S. C., Greenwood.—Library.—City will erect \$12,000 Carnegie Library. Address The Mayor.

Tex., El Paso.—Fire Station.—City has plans by Gibson & Robertson, El Paso, for bungalow fire station; red brick; cost \$3000. (Lately noted.)

COURTHOUSES

Ga., Lafayette.—County Commrs., J. C. Young, Chrmn., will erect courthouse; 50x150 ft.; fireproof; tile roof; cost \$55,000 to \$80,000; Chas. E. Bearden, Archt., Chattanooga. Address architect or Mr. Young. (Lately noted.)

Ky., Pineville.—County Commrs., H. M. Cline, Prest., are having plans prepared for courthouse; native stone; cost \$100,000.

Miss., Poplarville.—Pearl River county plans to erect courthouse; H. K. Rouse, Chancery Clk.

N. C., Mocksville.—Davie County Commrs. will repair courthouse noted damaged by fire at loss of \$30,000; J. S. Daniel, Register of Deeds. Address M. C. James, Route 5, Mocksville.

Tex., Wichita Falls.—County Commrs. are having plans prepared by Field & Clarkson, C. J. Pate, both of Wichita Falls, and Sanguinet & Staats, Fort Worth, Asso. Archts., for courthouse; cost about \$200,000. (Lately noted to have voted \$225,000 bonds.)

DWELLINGS

Ark., Fort Smith.—Mark Davis, 2400 Tillis Ave., has plans by A. C. Chisholm, Fort Smith, for residence; 36x52 ft.; 1 story; ordinary construction; Birds' Neponset shingle roofing; warm-air heat; cost \$3300; bids opened Feb. 10. Address owner.

Ark., Jonesboro.—Dr. R. W. Ratliff will erect dwelling; 45x67 ft.; shingle roof; hot-water heat; cost \$3000; bids opened about Feb. 10; T. Edison Mitchell, Archt., Jonesboro.

Ark., Judsonia.—W. E. Forbes will erect brick residence; cost \$10,000.

D. C., Washington.—H. R. Howenstein has plans by W. R. Talbott, 1314 F St. N. W., Washington, for three 2-story brick dwellings at 302-6 R St. N. W.; cost \$7500; construction by owner.

D. C., Washington.—Chas. H. Taylor has plans by Davis Palmer, 13 Warder Bldg., Washington, for two-story pebble-dash dwelling at 3007 Macomb St.; cost \$7000; construction by owner.

D. C., Washington.—Guy S. Zepp has plans by Spelden & Spelden, 1403 New York Ave. N. W., Washington, for 9 two-story brick dwellings at 1401-17 57th St.; cost \$18,000; construction by owner.

D. C., Washington.—H. L. Thornton has plans by Doran S. Platt, Takoma Park, D. C., for four 1½-story frame dwellings on Aspen St. N. W.; cost \$8800; construction by owner.

D. C., Washington.—Thompson Bros. have plans by Jos. G. Herbert, 1941 Naylor Rd. S. E., Washington, for two-story brick dwelling; cost \$7000.

D. C., Washington.—Carl H. Smith has plans by A. E. Landvoigt, 713 11th St. N. W., Washington, for 9 dwellings at 1743-59 Lanier St.; colonial style; eight rooms and two baths; 20x55 ft.; tapestry brick; two stories and attic; porch fronts; also contemplates similar block later.

D. C., Washington.—Gordon Bailey, 819 Randolph St. N. W., will erect four 2-story brick dwellings on New Hampshire Ave.; cost \$12,900.

D. C., Washington.—J. S. Gruver, Union Trust Bldg., has plans by Geo. T. Santmyer, 216 Kenos Bldg., Washington, for eight two-story brick dwellings at 1319-33 Quincy St. N. W.; cost \$35,000.

D. C., Washington.—J. C. Nealon has plans by W. R. Talbott, 1314 F St. N. W., Washington, for four 2-story brick dwellings; cost \$10,000.

Fla., De Land.—Mrs. Geo. B. Wilbur has plans by Francis M. Miller, Box 201, De Land, for residence; 72x35 ft.; tile walls; stucco finish; shingle tile roof; wood floors; hot-air heat; bids close Feb. 11. Address Archt. (See Machinery Wanted — Hollow Tile.)

Fla., Jacksonville.—T. Buffalo will erect 2-story brick-veneer residence; cost \$4500.

Fla., Miami.—J. Fred Betz, Philadelphia, Pa., is reported to erect bungalow.

Fla., Miami.—Mrs. Geo. W. McGuire has plans by J. S. Andrews, 212 12th St., Miami, for residence; 50x100 ft.; fireproof; tile roof; cost \$15,000; bids opened Feb. 15; construction begins April 1. Address Archt.

Fla., St. Petersburg.—Paul Shearer will erect 2 bungalows.

Fla., West Palm Beach.—L. P. McCord will erect residence; 36x46 ft., exclusive of porches; stucco or tile construction; composition roofing; artificial gas heat; city lighting; cost \$4500; F. W. Williams, Archt., West Palm Beach. (Lately noted.)

Fla., West Palm Beach.—David M. Kirk, Pittsburgh, Pa., has plans by C. C. Lightbown, West Palm Beach, for Venetian villa style residence.

Ga., Atlanta.—A. N. Canton will probably erect number of bungalows.

Ga., Atlanta.—Mrs. A. Mathewson will erect 1-story brick-veneer dwelling; cost \$4250; day labor.

Ga., Atlanta.—Dr. Phinizy Calhoun will erect residence on Andrews Ave.; Edward Dougherty, Archt., Atlanta.

Ga., Savannah.—Mrs. Kate M. Strong will erect 1-story residence on Alexander St.

Ga., Savannah.—C. L. Dokes will erect 1-story frame residence.

Ga., Savannah.—Randolph Spalding will erect 1-story frame metal-roof residence.

Ga., Savannah.—Savannah Realty Investment Co. will erect 2-story frame dwelling with metal roof on 43d St. and 2-story frame residence on Reynolds St.

Ga., Savannah.—Spalding Construction Co. will erect 2-story frame residence on 37th St. and 1-story frame dwelling on 38th St.

Ga., Vidalia.—D. C. Patillo will erect bungalow; frame; metal roof; electric lights; tile baths; cost \$3000; I. P. Crutchfield, Archt., Savannah.

Ga., Washington.—F. C. Simpson has preliminary plans by Willis Irvin, Washington, for bungalow; 5 rooms and halls; sleeping porch; electric lights.

Ky., Lexington.—W. M. Parish will erect residence; J. F. Kennedy, Archt., Lexington.

Ky., Louisville.—Pauline Eckenroth will erect 2 brick-veneer dwellings; cost \$7000.

Ky., Louisville.—Theresa Moellman will erect 3 frame dwellings on Market St. and W. Kentucky St.; cost \$5300.

La., New Orleans.—Hypolite Ruffin will erect cottage at Lakeview.

Md., Baltimore.—Samuel Dealham of Kraus & Co., 101-05 W. Pratt St., will erect residence at Curtis Bay on Patapsco Ave.

Md., Baltimore.—Walter M. Hampson, 26 St. Paul St., will erect eight 2-story brick dwellings at 601-15 W. 33d St.; cost \$3600.

Md., Baltimore.—Wilson H. Carter, Jr., 3320 Edmondson Ave., will erect 7 two-story dwellings on Wilkens Ave. near 9th St.; brick; 13.6x95 ft.; cost \$10,000.

Md., Baltimore.—Frank Novak Realty Co., 744 N. Kenwood Ave., Baltimore, acquired 22½ acres on Old York Rd. and Chestnut Ave., and will erect number of 2-story brick dwellings at cost of about \$500,000; also has plans by Callis & Callis, 2055 Kennedy Ave., Baltimore, for seven 2-story dwellings, 15x30 ft., on Harford Ave. between Norwood Ave. and 25th St.; cost \$10,000.

Md., Baltimore.—Frank Novak Realty Co., 744 N. Kenwood Ave., acquired site on Washington St. between North Ave. and Clifton Park, and will erect number of 2-story dwellings.

Md., Baltimore.—Geo. R. Morris, Gunter Bldg., acquired 30-acre site of Gittings property and will erect about 125 cottages and bungalows to cost \$5000 to \$7500 each.

Md., Baltimore.—Rochester Home Building Co., 2740 Harford Ave., is reported to erect 60 two-story brick dwellings on Alameda Ave.; 14x47 ft. and 15x50 ft.; cost \$107,000.

Md., Baltimore.—Downing & Murphy, Greenmount Ave., opposite Rose Hill Ter., will erect 12 colonial-style brick cottages on Guilford property to be known as York Court Plat No. 3.

Md., Lakeshore.—M. J. Swift & Co., 15 E. Camden St., will erect 2 dwellings at Woodlawn Heights; 20x60 ft.; 2 stories and basement; tile; fireproof roof; tile and mosaic floors; F. E. Beall, Archt., 306 St. Paul St., Baltimore.

Mo., Salisbury.—Mrs. E. E. Jackson, Baltimore, Md., has plans by Clyde N. Friz, 1523 Munsey Bldg., Baltimore, to remodel residence; cost \$900.

Miss., Jackson.—John T. Willis is preparing plans for residence on North State St.; hardwood floors and interior finish; face brick; tile roof; tile bathrooms; electric lights; plumbing fixtures; steam heat; cost about \$800; no general contract; architect to purchase materials and supervise construction.

Mo., Kansas City.—J. M. Clark will erect 3-story frame dwelling; cost \$7500.

Mo., Kansas City.—John H. Layton will erect two 1-story frame dwellings; cost \$4000.

Mo., Kansas City.—J. G. Eagle will erect 2-story frame dwelling; cost \$5000.

Mo., Kansas City.—King Realty Co. will erect two 1½-story frame dwellings; cost \$600.

Mo., Kansas City.—J. C. Kimmell will erect 1½-story brick dwelling; cost \$3000.

Mo., Kansas City.—E. H. Robbins will erect two 1-story frame dwellings; cost \$3000.

Mo., Kansas City.—Chas. A. Pratt, R. A. Long Bldg., will erect residence.

Mo., St. Louis.—Charles E. Cullen, Chief Examiner of Efficiency Board, plans to erect bungalow in South Hampton.

Mo., Kansas City.—Gertrude Berry will erect 1-story frame dwelling at 3721 Agnes St.; cost \$12,000.

Mo., Kansas City.—Miss Maud Gray will erect 8 two-story dwellings; cost \$20,000.

Mo., Kansas City.—Terminal Investment Co. will erect 2-story frame dwelling at 32 E. 5th St.; cost \$1250.

Mo., St. Louis.—H. L. Schnure, Mgr. of Velle Automobile Co., has plans by Maritz & Henderson, St. Louis, for residence; L-shaped; 15x75 ft.; French half timber; first story brick, second story hand-hewn oak with matted and pattern brick between oak timbers; stone columns; sun parlor; interior Gothic style; garage in wing at rear; cost \$40,000.

Mo., St. Louis.—N. W. Ewing, Gen. Agt. of Maryland Casualty Co., has plans by Roth & Study, St. Louis, for residence; matt brick walls; entrance hall with black and white marble floor and wrought-iron stairs; sunroom; Italian stone fireplace in living-room.

N. C., Asheville.—Mrs. L. M. Perry is having plans prepared by Northup & O'Brien, Winston-Salem, N. C., to erect dwelling; brick veneer; 12 rooms; tile roof; cost \$15,000.

N. C., Asheville.—Fred Kent is having plans prepared by Northup & O'Brien, Winston-Salem, N. C., for alterations and addition to residence; ordinary construction; cost \$5000.

N. C., Greensboro.—J. E. Latham will erect 2-story stone-veneer addition to residence and 2-story private garage; cost \$20,000.

N. C., Winston-Salem.—Mrs. P. A. Gorrell will erect double and single dwelling; cost \$800.

Okl., Oklahoma City.—F. L. Morley will erect \$20,000 residence.

Okl., Tulsa.—Geo. W. Groves will erect 1-story frame residence; 30x48 ft.; shingle roof; wood floors; gas heat; electric lights; cost \$3500; plans and construction by owner.

Okl., Tulsa.—Isaac Shawler will erect 1-story frame residence; cost \$4000.

Okl., Tulsa.—J. L. Vansant will erect frame residence; cost \$3500.

S. C., Walterboro.—M. Panlottle will erect store and residence building. (See Stores.)

Tenn., Chattanooga.—R. W. Clemmons, 301 Union St., will erect dwelling; 42x32 ft.; brick; slate roof; oak floors; cost \$5500; hot-water heat, \$900; electric lights, \$100; concrete sidewalk; bids opened about Mch. 15. Address Louis Bull, Archt., 301 Union St., Chattanooga.

Tenn., Chattanooga.—W. A. Starratt has plans by C. G. Mitchell, Johnson City, for residence; brick veneer; cost \$5500.

Tenn., Knoxville.—H. W. McIlwaine will erect frame dwelling at 1533 Highland Ave.; cost \$3000.

Tenn., Knoxville.—W. G. Lee will erect frame dwelling; cost \$4000.

Tenn., Memphis.—J. R. Ellis, 1636 Vinton Ave., will erect 3 two-story residences, lately noted, at 1156-60 Linden Ave. and 1181 Vance Ave.; 35x50 ft.; ordinary construction; roofing undecided; cost \$4500; hot-water heat, \$500 each; plans and construction by owner. (See Machinery Wanted—Slate Roofing.)

Tex., Athens.—Edgar Henry has plans by Walter G. Shadday, Athens, for residence; 2 stories; frame; 53.6x25 ft., less porches; shingle roof; cost \$4500; date of opening bids not set.

Tex., Athens.—E. N. Robinson will erect residence; 1 story; brick-veneer; 48x54 ft., less porches; shingle roof; probably hot-air heat; cost \$5000 to \$6000; date of opening bids not set; Walter G. Shadday, Archt., Athens.

Tex., Austin.—Max Snaman has plans by C. H. Page & Bro., Austin, for 4 dwellings, 4 to 5 rooms each.

Tex., Austin.—Miss Julia Pease will erect three 5 to 7-room dwellings.

Tex., El Paso.—Hawkins Improvement Co. will erect two 5-room bungalows; cost \$7200.

Tex., El Paso.—Mayfield Building Co. will erect dwelling on Montana St.; cost \$4500.

Tex., San Antonio.—A. G. Dugger will erect 2-story dwelling; cost \$7000.

Tex., Wichita Falls.—M. J. Bashara will erect \$25,000 residence.

Tex., Wichita Falls.—R. O. Harvey will erect \$10,000 residence.

Va., Norfolk.—C. C. Fitch will erect two 2-story frame residences; cost \$4000.

Va., Norfolk.—Henry Lee has plans by Ferguson, Calrow & Wrenn, Norfolk, for residence in Edgewater.

Va., Norfolk.—W. Lee Counselman has plans by Neff & Thompson, Seaboard Bank Bldg., Norfolk, for residence on Jamestown Blvd.; about 40x40 ft.; frame; shingle roof; wood floors; hot-water heat; cost \$5000; bids opened Mch. 8. Address Archts.

Va., Richmond.—W. J. Gilman will erect 3 two-story brick dwellings on Linden St.; cost \$9000.

Va., Richmond.—H. W. Goodwyn will erect 4 two-story brick dwellings on West St.; cost \$12,000.

Va., Richmond.—Mrs. R. B. Andrews will erect 2-story brick dwelling on Semmes Ave.; cost \$3700.

Va., Richmond.—George E. and Irene H. Owen will erect 2-story brick dwelling at 3019 Floyd Ave.; cost \$4100.

Va., Richmond.—H. W. Goodwyn will erect four 2-story brick dwellings on West St.; cost \$12,000.

Va., Staunton.—Clyde Lambert will erect residence in addition to two lately completed.

W. Va., Martinsburg.—A. Paul Hertzog has plans by C. E. Kent, Martinsburg, for residence; 29x32 ft.; ordinary construction; slate roof; direct steam heat; electric lighting; cost \$2500; bids opened Mch. 10. Address owner. (Lately noted.)

GOVERNMENT AND STATE

Ga., Savannah.—Quarantine Station.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., opens bids Mch. 13 to erect detention barracks, boathouse, gangway, wharf, etc., at quarantine station; drawings and specifications from custodian on site or Mr. Wetmore.

Va., Richmond.—Office Building.—Legislative Comm. selected Carneal & Johnston, Richmond, as architects for office building annex to State Library; cost about \$300,000; details not determined. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

Ga., Atlanta.—Rev. W. W. Miminger has bequest of \$100,000 to erect Henrietta Eggleston Hospital for Children.

Ga., Columbus.—Hospital Board will erect 8-room addition to dormitory of City Hospital; cost \$3000.

N. C., Barlum Springs.—Presbyterian Orphan's Home will erect Sprunt Memorial Infirmary; capacity, 40 patients; cost \$15,000; Kenneth M. Murchison, Archt., 101 Park Ave., New York. (Lately noted at N. C., Wilmington.)

S. C., State Park.—State Board of Health receives bids at office of Wilson & Sompayrac, Archts., 1404-06 Palmetto Bldg., Columbia, S. C., until Mch. 25 to erect Ward 2 for women of State Sanatorium; plans and specifications at office of Archts. as above.

W. Va., Clarksburg.—Clarksburg Protestant Hospital Co., 326-27 Joff Bldg., Clarksburg, will erect hospital; 110x100 ft.; 5 stories; fireproof; built-up composition roof; cost \$135,000; Stephen W. Ford, Archt., Clarksburg; construction to begin about June 1. (Lately noted.)

W. Va., Spencer.—Spencer State Hospital, Chas. A. Barlow, Supt., has plans by H. Rus Warne, Charleston, W. Va., for receiving wards at hospital; 40x144 ft.; stone and brick; slate roof; steam heat; electric lights; cost \$20,000 to \$25,000; construction

by hospital force and subcontracts, begins June 1; subcontracts consist of stone, brick work and roof; address Mr. Barlow. (See Machinery Wanted—Building Materials; Plumbing; Electrical Work; Heating; Hospital Supplies.)

HOTELS

Ala., Mobile.—Sam Lackland is reported having plans prepared by A. H. Downey, Mobile, for hotel at St. Francis and Conception Sts.; 50x52 ft.; 7 stories; construction begins in April; cost \$75,000 to \$100,000.

Ark., England.—Geo. W. Morris will remodel hotel; 75x140 ft.; mill construction; cost \$7500; steam heat \$2000; John P. Almand, Archt., 1107 State Bank Bldg., Little Rock. Address owner. (Lately noted.)

Fla., New Smyrna.—Reo Vista Hotel Co. is being organized with \$50,000 capital to erect hotel on Magnolia St.

Fla., Tampa.—Hillsboro Hotel Co. is reported to erect addition to hotel; 9 stories; more than 150 rooms; brick; extend lobby back 14 ft.; elevators, etc.; cost \$25,000. Prest. L. B. Skinner of company writes Manufacturers Record: "Information not yet available."

Ky., Ashland.—Ventura Hotel has plans for addition to building; 60 rooms; plans include auditorium-room with extension capable of being converted into ballroom, etc.; each room equipped with combination tub and shower baths; cost \$50,000.

Mo., St. Louis.—John D. Davis of Lindell Store, Edw. Mallinckrodt, Daniel Catlin and others are promoting erection of hotel at Washington Ave. and 9th St.; 14 or 15 stories; basement and sub-basement; about 400 guest-rooms; fireproof; steel skeleton frame; reinforced concrete floors; masonry inclosing walls; balconies on street front; brick and terra-cotta facing; lobby 24 ft. high; grill-room with stone floor and fumed oak wainscot; wood wainscot in main dining-room; banquet-room 66x150 ft., 22 ft. high, seating capacity 700; 3 high-speed electric elevators; kitchen 46x102 ft.; refrigerating and other machinery in basement; roof garden inclosed in glass; total investment, including site, furnishings, etc., \$2,000,000; Mauran, Russell & Crowell, Archts., St. Louis. (Lately noted.)

N. C., Lake Junaluska.—Junaluska Hotel Co. organized to erect 125-room hotel.

N. C., Lake Junaluska.—S. E. Weatherly will erect 30-room hotel.

Okl., Ardmore.—James R. Sharp, Dallas, Tex., is reported promoting erection of \$75,000 hotel.

Okl., Ardmore.—Chamber of Commerce, Felix K. West, Secy., is promoting erection of hotel; 6 stories; 100x200 ft.; fireproof; 125 rooms; cost \$180,000. (Lately noted.)

Okl., Marlow.—W. G. Johnson, Doyle, Okla., plans to erect 20-room brick hotel.

Okl., Henryetta.—J. H. Campbell has plans for improvements to Georgian Hotel; will provide about 20 additional rooms.

Tenn., Chattanooga.—D. B. Glenn of Chattanooga Feed Co. plans to erect hotel; 5 stories; about 100 rooms; semi-fireproof; sprinkler system; plans prepared.

Tex., El Paso.—S. P. Smith is reported having plans prepared for Leon Hotel; about 50 rooms; steam heat; ventilating system.

Tex., San Antonio.—T. H. Zanderson will not erect hotel as previously noted.

MISCELLANEOUS

Ala., Loxley.—Barns, etc.—Frank Sharp will establish stock farm, erect barn and several adjacent outbuildings at once.

Ark., Craig Mill.—Clubhouse.—Spring Lake Club will erect clubhouse; cost \$6000; completion by June 1; 47x60 ft.; 1 and 2 stories; ordinary construction; shingle roof; electric lights; Mann & Stern, Archts., Little Rock; day labor.

Fla., Jacksonville.—Home.—Helping Hand Mission Corp. will erect building for rescue home; 3 stories; about 100x120 ft.; fireproof; cost \$50,000; H. J. Klutho, Archt., St. James Bldg., Jacksonville; bids opened about Mch. 30. Address Dr. J. H. Smith, Central City Mission, Jacksonville. Dr. Smith's address from Mch. 4 to 11 will be Belmont Hotel, New York.

La., Shreveport.—Fair.—Louisiana State Fair will expend \$15,000 for improvements, including \$10,000 swine barn, extensions to other barns, model dairy, etc.; also considering erecting agricultural building.

Mo., Kansas City.—Clubhouse.—Kansas City Club, W. A. Repp, Prest., is reported to expend \$400,000 to erect clubhouse; 12 stories; 75 to 100 guest-rooms; roof garden; gymnasium to occupy one entire floor; Turkish and plunge baths; swimming pool, etc.

Okl., Oklahoma City.—Clubhouse.—Oklahoma City Golf and Country Club will double size of clubhouse; concrete; fireproof; 15 to 20 sleeping-rooms; cost \$20,000; Bailey & Bailey, Archts., Oklahoma City.

Tenn., Memphis.—Clubhouse.—Co-operative Club, Mrs. John A. Merrill, Prest., plans to erect clubhouse.

Tenn., Nashville.—Clubhouse.—Commercial Club has plans by A. Ten Eyck Brown, Atlanta, and Russell E. Hart, Nashville, to remodel Vanderbilt Law Bldg.; receives bids until Mch. 13; plans and specifications at office Mr. Hart. (Previously noted.)

Tex., Austin.—Clubhouse.—Country Club is reported to expend \$10,000 for improvements to clubhouse.

Va., Hopewell.—Clubhouse.—Hopewell Terrace Co. is reported to erect clubhouse. (See Apartment-Houses.)

W. Va., Logan.—Restaurant.—Ben Tobin, Prop. of German Restaurant, is having plans prepared by Leslie Kayser, Yuma, Va., for brick building; 2 stories; lower floor restaurant; upper floor probably apartments.

RAILWAY STATIONS, SHEDS, ETC.

Ala., Attmore.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., Louisville, Ky., will erect depot.

Va., Charlottesville.—Southern Ry. Co., W. H. Wells, Ch. Engr. Construction, Washington, D. C., is reported to spend \$100,000; to include improvements to passenger depot, providing two waiting-rooms, remodeling structure, removal of tracks, etc.; plans also include erection of reinforced concrete bridge, two additional tracks, two concourses, one 30 and other 130 ft. wide.

SCHOOLS

Ala., Alabama City.—Dwight Mfg. Co. will erect addition to school; mill construction; steam heat; bids opened about May 1; construction begins June 1; Lockwood, Greene & Co., Archts., 60 Federal St., Boston, Mass. Address owner. (Lately noted.)

Ala., Gaylesville.—Gaylesville Baptist Academy, Rev. John L. Ray, pastor, will expend \$10,000 to improve school.

Ala., Hamilton.—W. F. Fegins, Supt. of Education, State Capitol, Montgomery, receives bids until Mch. 25 to erect 3-story brick school for Sixth Dist. Agricultural School; plans and specifications on file Mch. 9 at office R. N. Terrell, Chrmn. Bldg. Com., Hamilton, and Frederick Ausfeld, Archt., Bell Bldg., Montgomery; ordinary construction; auditorium to seat 700; tar and gravel roofing; electric wiring; cost \$25,000 without equipment; one-pipe steam-heating system, \$1350. (Lately noted.)

Ala., Tusculumbia.—City has \$60,000 (bonds) available for schools, etc. Address The Mayor. (See Road and Street Work.)

Ark., Hagler.—Hagler School Dist. will erect graded school; 6 rooms; galvanized roofing; wood heaters; cost \$6000; bids opened about Mch. 25; J. H. Bliss, Archt., Hope, Ark. (Address John D. Scott, Hagler. (Lately noted.)

Ark., Hot Springs.—Hot Springs School Dist. issued \$30,000 bonds to erect school; construction begun. Address Dist. School Trustees.

Ark., Stuttgart.—City will soon begin erection of \$20,000 school. Address The Mayor.

Fla., De Land.—De Land School Trustees are considering election on \$60,000 bonds to erect school; having plans prepared by F. M. Miller, De Land, for brick building; fireproof except wood floors.

Fla., Miami.—Dade County Commrs. plan to erect school in southern part of county.

Fla., Ozone.—Board of Public Instruction, Pinellas county, will receive bids until Mch. 14 to erect brick school in Curlew Dist.; plans and specifications at office of Lester Avery, Clearwater, or County Supt., Clearwater.

Ga., Eatonton.—City voted \$30,000 bonds to erect school; fireproof; John Adams, City Clerk. (Previously noted.)

Ga., Newnan.—City voted \$55,000 to erect high school and repair other structures. Address The Mayor. (Previously noted.)

Ga., Winder.—City, W. O. Perry, Mayor, voted \$22,000 bonds to complete school building. (Previously noted.)

Ky., Harboursville.—Union College contemplates erection of gymnasium and science hall.

Ky., Hopkinsville.—Christian county votes Mch. 19 on \$400,000 bonds; to include \$25,000 for school. Address County Commrs.

Ky., Sonora.—Sonora School Dist. will soon vote on bonds to erect addition to graded school; probably 2 additional rooms.

Md., Cambridge.—School Board is considering \$75,000 bond issue to erect school.

Md., Chestertown.—Legislature passed bill authorizing Kent county to issue bonds to erect schools at Fairlee, Galena and Chestertown. Address County Commrs.

Md., Galena.—See Md., Chestertown.

Miss., Coldwater.—City will issue \$15,000 bonds to erect school; S. D. Wooten, Mayor.

Mo., Perryville.—Church of the Assumption will erect parochial school. (See Schools.)

Mo., St. Joseph.—School Board opened bids to erect proposed North St. Joseph High School at 4th and Highland Sts.; Hackett & Simpson are lowest bidders at \$153,984.

N. C., Columbus.—County Board of Education, E. W. S. Cobb, Supt., opens bids Mch. 27 to erect school; 40x60 ft.; two stories; brick veneer; metal roof; steam heat; electric lights; composition blackboards; six rooms and auditorium; cost \$8000; C. Gadsden Sayre, Archt., Anderson, S. C. (Lately noted.)

N. C., Durham.—Geo. W. Watts, Chmn. School Board, receives bids until Mch. 21 to erect Watts Street and Morehead schools; plans and specifications at office of Linthicum & Linthicum, Asso. Archts., with Chas. Howard Lloyd, Archt., Harrisburg, Pa., 502-503 Loan and Trust Bldg., Durham. (Previously noted.)

N. C., Huntersville.—Huntersville School Dist. votes April 6 on bonds to erect school; 12 recitation-rooms; brick; slate roof; cost \$22,500; heating plant \$2000. Address C. A. Cochran, Charlotte, N. C. (Lately noted.)

N. C., Mt. Airy.—City opens bids April 10 to erect high school building; 7 classrooms and auditorium to seat 400; ordinary brick construction; granite trimmings; tar and gravel or composition roof; hot-air heat; Northrup & O'Brien, Archts., Winston-Salem, N. C. (Noted in Jan.)

N. C., West Raleigh.—Raleigh Township School Comm. receives bids from local contractors only until Mch. 15 to erect school in Oberlin; 85x60 ft.; 2 stories and basement; brick veneer; slate roof; wood floors; electric lights; heating not decided; cost \$10,000; plans and specifications at office of J. M. Kennedy, Archt., 301 Merchants' National Bank Bldg., Raleigh; B. F. Montague, Chmn. Building Com.

Okla., Commerce.—School Dist. No. 18 will vote on \$10,000 bonds to erect school. Address Dist. School Trustees.

S. C., Cedar Springs.—South Carolina School for Deaf and Blind is having plans prepared by Edwards & Sayward, 633 Candler Bldg., Atlanta, Ga., for remodeling and extension to main administration building; cost \$50,000.

Okla., Dighton.—City voted bonds to erect school. Address The Mayor.

Okla., Dennington.—Christian Church will erect building. Address The Pastor.

S. C., Townville.—J. R. Fant, Chmn. Trustees, has plans by C. Gadsden Sayre, Anderson, S. C., for school building; six rooms and auditorium; brick veneer; metal roof; cost \$5000; bids opened between Mch. 25 and April 4.

Tenn., Benton.—Hope county will receive bids after Apr. 1 to erect grammar school; ordinary construction; 68x68 ft.; tile roof; cost \$8000 to \$10,000. (Lately noted.)

Tenn., Fountain City.—See Tenn., Knoxville.

Tenn., Knoxville.—Knox County Commrs. selected architects as follows for county schools: Fountain City and Fair Garden schools, J. H. Ryno; South Knoxville, L. C. Waters; Lincoln Park and Powell Station, Albert C. Baumann; all architects of Knoxville; South Knoxville structure 12 rooms, cost \$20,000; other structures 10 rooms, cost \$15,000 each. (Lately noted.)

Tenn., Knoxville.—City Commission receives bids until Mch. 20 to erect Moses School; 15 rooms; stone, brick and terracotta; cost \$35,000 to \$40,000; plans and specifications at office R. F. Graf & Son, Archts., Knoxville. (Lately more fully detailed.)

Tenn., Milligan.—Milligan College will erect \$23,000 dormitory; C. G. Mitchell, Archt., Johnson City, Tenn.

Tenn., Powell Station.—See Tenn., Knoxville.

Tex., Abilene.—Simmons College lets contract about Mch. 10 to erect dormitory; 125x75 ft.; fireproof; soundproof floors; cost \$35,000; D. S. Castle, Archt., Abilene; bids opened. (Noted in Dec.)

Tex., Alcott.—Cypress Consolidated School Dist. No. 16 votes Mch. 17 on \$8000 bonds to erect and furnish school; Walter W. Bell, E. H. Heaton and S. A. Jeffords, Trustees.

Tex., Big Springs.—City votes Mch. 11 on \$50,000 bonds to erect school building; plans

being prepared by C. H. Page & Bro., Austin and Houston. (Lately noted.)

Tex., Royce.—Royce Ind. School Dist. Trustees ordered election for Apr. 1 on \$20,000 bonds to improve school.

Tex., Eustace.—School Board has plans by Walter G. Shaddy, Athens, Tex., for addition to school; 56x54 ft.; 2 stories; 8 rooms; metal shingle roof; wood floors; hot-air heat and ventilating system; cost \$5500; bids opened in about 30 days. Address School Board. (See Machinery Wanted—Heating System.)

Tex., Fort Worth.—Washington Heights Ind. School Dist. votes Mch. 18 on \$10,000 building bonds. Address Dist. School Trustees.

Tex., Huntsville.—Scott County High School Board accepted plans for dormitory.

Tex., Meridian.—Meridian College will erect \$20,000 dormitory for boys.

Tex., Paris.—City votes April 4 on \$40,000 bonds for schools. Address The Mayor.

Tex., San Angelo.—Lake View School Dist. is considering election on tax to erect school. Address Dist. School Trustees.

Va., Blacksburg.—G. R. Ragan, Archt., 702 Colonial Bank Bldg., Roanoke, Va., receives bids until Mch. 11 for material and erecting Blacksburg High School; plans and specifications at office of Mr. Ragan call for 3-story structure; 60x100 ft.; ordinary construction; slate roof; steam heat; electric lights; cost \$20,000. (Previously noted.)

Va., Danville.—City is having plans prepared by Pritchett & Henderson, Dudley Building, Danville, for lately-noted high school; 103x87 feet; mill construction; 2½ stories; brick; composition, tar and slag roof; hardwood and composition floors; alternate bid on metal windows (Fenestra, etc.), metal lockers, terra-cotta, maple floors; metal ceiling, etc.; cost \$35,000; heating plant \$5000; bids opened about March 20; construction begins April 15; Wiley & Wilson, Engrs. for heating. Address Architects. (See Machinery Wanted—Building Materials; Metal Window Frames; Lockers; Metal Ceiling.)

W. Va., Folsom.—See W. Va., New Martinsville.

W. Va., Mobley.—See W. Va., New Martinsville.

W. Va., New Martinsville.—Grant Dist. Board of Education ordered election for Mch. 11 on levy to provide \$70,000 bond to erect schools at Pine Grove, Jacksonburg, Smithfield and Mobley; also improvements to buildings for Wheat school, Criswell school, Folsom school and Cain school; A. L. Chambers, Prest.

W. Va., Pine Grove.—See W. Va., New Martinsville.

W. Va., Jacksonburg.—See W. Va., New Martinsville.

W. Va., Ronceverte.—Ford Spring Dist. votes Mch. 21 on \$30,000 bonds to erect addition to, improve and furnish district high school; J. W. deVeber, Prest. Board of Education. (Lately noted.)

STORES

Ala., Anniston.—John Shelnett has plans by Mesker & Co., Evansville, Ind., for store and rooming-house; 25x120 ft.; two stories; ordinary brick construction; cement felt roofing; electric lights; cost \$5000; hot-air heat \$150.

Ala., Atmore.—H. H. Patterson has plans for two 2-story brick buildings to be occupied by W. M. Carney Mill Co. and M. Benson. (Carney Mill Co. lately noted to erect building.)

Ark., Conway.—F. U. Halter plans to erect business building; 3 stories; 75x100 ft.; probably fireproof; outside walls white brick; interior walls and floors steel and concrete; elevator; heating plant; city lighting; construction by owner. (Lately noted.)

Ark., Conway.—H. B. Ingram will erect 2-story business building.

Ark., Little Rock.—Schmelzer & Schay will remodel 2-story brick building at 301-03 E. Markham St.; cost \$5000.

Ark., Tuckerman.—Jackson County Realty Co. will erect lately-noted store and office building; 25x80 ft.; tin roof; electric lighting; cost \$4000; Mr. Bingle, Archt., Newport, Ark.; construction to begin about Apr. 1. (See Machinery Wanted—Building Materials; Roofing; Doors and Windows.)

D. C., Washington.—J. F. M. and G. C. Rewle have plans by A. H. Sanemann of 1334 H St. N. W., Washington, for store building at 923 12th St. N. W.; 55x22 ft.; will soon let contract.

D. C., Washington.—A. B. Mullett & Co., Union Trust Bldg., Washington, prepared

plans for store and apartment building at 11th St. and Florida Ave.; 95x15 ft.; ordinary construction; tin and slate roof; terrazzo and wood floors; hot-water heat; electric lights; 2 stories; cellar under entire building; entire frontage of plate-glass show windows; cost \$8000; bids opened Mch. 6; owner's name withheld.

Fla., Daytona.—Louis Alder will erect business building at Magnolia and Palmetto Aves.; 160x75 ft.; two stories; brick; nine store rooms.

Fla., Fort Myers.—Mrs. Joe Green will erect business and apartment building; two stories; brick; 40x25 ft.; pressed brick front; white pressed brick foundation; completion in 60 days.

Fla., Pensacola.—W. G. Porter is reported to erect addition to building.

Fla., Tampa.—S. H. Kress & Co., 350 Broadway, New York, are reported to enlarge store building.

Ga., Atlanta.—Mrs. M. H. Wherry will erect 3 pressed brick stores; cost \$3500.

Ga., Griffin.—H. V. Kell Co. will erect store and warehouse building; 3 stories; fireproof; brick and concrete; mill construction; sprinkler system; flour resacking and refrigeration plants; side and team tracks; cost \$30,000.

Ga., Savannah.—Mrs. Josephine Seay will erect 1-story brick building at 332 W. Broad St.

Ga., Thomasville.—W. J. Upchurch and Homer Williams will erect building for stores, etc. (See Association and Fraternal.)

Ky., Louisville.—Louise Summers will erect brick store at 705 W. Market St.; cost \$3500.

La., Marksville.—Edmond Michel will erect two-story brick business building.

La., New Orleans.—Frank J. Matthews will erect business building.

Miss., Laurel.—Knights of Pythias will erect store and lodge building.

Mo., Kansas City.—Alice L. Conover will erect 2-story brick business building; cost \$16,000.

Mo., Kansas City.—Crescent Realty Co. will erect 1-story brick store building; cost \$3000.

Mo., St. Louis.—Catherine Howell will erect 2-story store and flat building at 3221-27 N. Newstead Ave.; cost \$14,500.

Mo., St. Louis.—Jos. P. Kelly will erect store in Delmar Ave.

N. C., Edgemont.—T. A. Clarke of Clarke & Bryant is having plans prepared for building; brick; lower floor for stores; upper floors lodgerooms; cost \$10,000.

N. C., Hickory.—J. G. Marshall will erect double brick store; C. G. Mitchell, Archt., Johnson City, Tenn.

N. C., Ferry, R. D. from Mooresboro.—T. C. Holland will erect store building.

N. C., Winston-Salem.—A. P. Grizzard is having plans prepared for store and apartment building. (See Apartment-Houses.)

Okla., Apache.—J. T. Wells Hardware & Implement Co. receives bids until Mch. 15 for material and erection of building; 1 story; brick; 50x120 ft.; basement 40x50 ft.; plans and specifications at company's office.

Okla., Cheyenne.—I. O. O. F. will erect business and lodge building. (See Association and Fraternal.)

Okla., Drumright.—Fobroy & Moore and G. L. Maxwell will erect brick business building.

Okla., Forgan.—John Angleton will erect business building.

Okla., Hobart.—C. A. Starns will erect addition to business building; 25x100 ft.; brick.

Okla., Madill.—Ben Long will erect business building.

Okla., Oklahoma City.—Williamson-Halsell-Frazier Co. will erect addition to business building; 5 stories; brick; 60x100 ft.; fireproof; cost \$60,000.

Okla., Oklahoma City.—Kansas City Life Insurance Co., Kansas City, Mo., is reported to erect business and office building.

Okla., Poteau.—D. E. Patrick will erect store building; ordinary brick construction; metal roof; stoves; cost not determined; T. P. Millner, Archt., or owner may be addressed.

Okla., Tulsa.—Townley Bros. are reported to erect 5-story building on Boston Ave.

S. C., Spartanburg.—J. N. Cudd and others, owners of Argyle Hotel property, will remodel building for store to be occupied in part by J. Thomas Arnold Co. of Greenville, S. C.; ground floor 45x190 ft.; will construct front, remove stairway and 2 partitions, provide restroom, steam-heating plant, tile floor at entrance; interior floor hardwood; metal ceiling; display windows, 6x12.6x25 ft., with tile floor and steel girders; cost \$20,000; S. P. Tinsley, Archt., Spartanburg.

S. C., St. Matthews.—Har Lodge, A. F. & A. M., plans to erect building for stores, etc. (See Association and Fraternal.)

S. C., Walterboro.—Terry & Shaffer will erect store building.

S. C., Walterboro.—M. Paniottle will erect store and residence building; 2 stories; brick; 40x45 ft.; 2 storerooms on first floor 18 and 22 ft. wide.

Tenn., Jonesboro.—J. D. Cox will remodel store building; C. G. Mitchell, Archt., Johnson City, Tenn.

Tex., Beaumont.—Curley Pine Camp, Woodmen of the World, is contemplating erecting store and lodge building. (See Association and Fraternal.)

Tex., El Paso.—Haymon Krupp will erect store building; 60x120 ft.; steel frame; concrete and brick facing; sprinkler system; fireproof; cost \$50,000.

Tex., Granger.—W. C. Reinhardt & Co. will erect brick business building.

Tex., Lubbock.—J. B. Phillips will erect brick store building.

Tex., Lubbock.—Lubbock Realty Co. will erect 25-ft. front brick store building.

Tex., Lubbock.—Grollman & Bender Dry Goods Co. is having plans prepared by L. A. Hitchcock for business building.

Tex., McAllen.—D. Guerra & Sons will erect 2-story business building.

Tex., Harrisburg.—T. J. Collins is having plans prepared by Lane & Dowdy, Houston, for business building.

Tex., Pittsburg.—W. H. Cason will remodel and improve brick business building.

Tex., Plano.—J. W. Shapard will erect business building.

Tex., Sweetwater.—J. H. Meyer will erect brick building; 50x140 ft.

Tex., Wichita Falls.—G. W. Filgo will erect building; 2 stories; 23x30 ft.; brick; lower floor for store; upper floor, lodgerooms.

Va., Richmond.—H. C. Brown will erect brick stores; cost \$5000.

W. Va., Bluefield.—E. S. Pedigo Co. is having plans prepared by Pedigo & Garry, Bluefield, for store building; 3 stories; 130x184 ft.; cost \$60,000.

W. Va., Logan.—Pete C. Minotti of Mountain State Hardware Co. will erect 4-story brick mercantile building.

W. Va., Wellsburg.—Meyer & Easterday have plans by M. L. Wells, Wellsburg, for store building; 35x100 ft.; composition, Barrett specification roofing; steam heat; electric elevator; bids opened about Mch. 5; cost \$10,000. (Lately noted.)

THEATERS

Ga., Washington.—Willis Irvin, Washington, is preparing plans for opera-house; seating capacity 800; hot-air heat; electric lights; plumbing; plans ready about Mch. 20. (See Machinery Wanted—Theater Equipment; Seating.)

Ga., Winder.—J. L. Saul will erect moving picture theater on Broad St. by day labor; purchased all materials; plans by Jas. J. Baldwin, Anderson, S. C., call for structure 30x100 ft.; fireproof; tin roof; cost \$4500 to \$5000. (Lately noted.)

S. C., Charleston.—Southern Exhibition Co. will expend \$40,000 to \$50,000 to remodel Academy of Music; C. K. Howell, Archt., Charlottesville, Va.

Tex., Dallas.—Leon S. Gohlman, Houston, leased building at 1510 Elm St., and will remodel for theater.

Tex., Galveston.—A. Martini has plans by I. A. Walker and Don C. Orlopp, Galveston, for theater; 22x120 ft.; ordinary construction; built-up asbestos roof; cost \$8000; J. W. Zempter, Galveston, is lowest bidder for construction; subcontracts include lighting fixtures, motors, chairs, scenery, etc. (Lately noted.)

Tex., Lubbock.—J. D. Lindsey will erect 50-ft. front brick theater on N. 1st St.

WAREHOUSES

Ga., Griffin.—H. V. Kell Co. will erect store and warehouse building. (See Stores.)

Ga., Griffin.—H. V. Kell Co. will erect warehouse and office building; 3 stories; sprinkler system; refrigerating plant; team tracks on 3 sides; construction begins in 60 days.

Mo., St. Louis.—Jos. T. Ryerson & Son, main office, Chicago, will erect warehouse addition to Hagar branch.

Tenn., Chattanooga.—C. A. Lyerly is having plans prepared by Chas. J. Bearden, Chattanooga, for cotton warehouse; 44,000 sq. ft.; mill construction; gravel roof. (Lately noted.)

C. A. F. & Co. for stonework.

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Tenn., Knoxville.—Indian Refining Co. will erect warehouse and storage buildings; 40x100 ft., 30x52 ft., 45x45 ft. and 15x30 ft.; brick, concrete and frame; certain roof; wood flooring; small 15 H. P. boiler for heating plant; electric lights; cost \$5000 to \$6000; construction by owner.

Va., Richmond.—Woodward & Son, 504 Mutual Bldg., have plans by D. Wiley Anderson, 320 E. Main St., Richmond, for warehouse

and office building 140x330 ft. and addition at warehouse 40x330 ft.; brick and frame; corrugated iron siding; 5-ply slag roof; concrete flooring; cost \$16,000; bid opened in about 10 days; construction begins in two or three weeks.

W. Va., Logan.—S. B. Robertson will erect warehouse; 6 stories; 104x60 ft.; mill construction; Johns-Manville roofing; freight elevator to cost \$1500. (Lately noted.)

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—James R. Skinner let contract to Skinner & Garrett, 314 Evans Bldg., Washington, for apartment-house; 4 stories; 18 suites; colonial brick exterior; 35x50 ft.; English basement style; completion in about five months; cost \$40,000; Jos. H. Grant, Archt.

Ga., Atlanta.—C. W. Lane let contract to Mackle Construction Co., Atlanta, to erect apartment house at Ponce de Leon Ave. and Durant Pl.; cost \$28,000.

Mo., Catonsville.—Chas. F. Schaub let contract to Schaub Bros., 39 Newburg Ave., Catonsville, to erect 3-story apartment-house.

Mo., St. Louis.—Henrietta Meyer let contract to H. F. Tacke, St. Louis, to erect 2-story tenement-house at 3414-16 S. Spring St.; cost \$5000.

Mo., St. Louis.—Murch Bros. Construction Co., general contractor to erect store and apartment building for Front Realty Co., let following subcontracts: Brick work, John Schmitt; cut stone, Pickel Stone Co.; electric wiring, Eclipse Electric Co.; granite, E. R. Dryden Construction Co.; glass, Condie-Bray Glass & Paint Co.; finish hardware, Quernheim Sales Agency; rough hardware, Schroeter Bros. Hardware Co.; heating, Bradley Heating Co.; iron and steel, Spuck Iron & Foundry Co.; lumber, J. Seidel Lumber Co.; marble and tile, St. Louis Marble & Tile Co.; millwork, Huttig Sash & Door Co.; plastering, Craig Plastering Co.; plumbing, H. D. M. Doerner Plumbing Co.; painting, J. W. O'Connell Painting Co.; roofing, General Roofing Co.; rubble masonry, Adam Reitz; sheet metal, Wand & Niehaus; screens, B. F. Douglas Screen Mfg. Co.; slate roof, St. Louis Slate & Tile Roofing Co.; stairs, Missouri Stair Co.; all of St. Louis; plans call for 6-story structure; 120x22 ft.; fireproof; cost \$100,000. (Noted in February.)

Tenn., Memphis.—W. P. Hale, Osceola, Ark., let contract to erect store and apartment building. (See Stores.)

Va., Norfolk.—A. C. Swain let contract to J. W. Saunders, Norfolk, to erect apartment house; 2 suites; frame; cost \$3300.

ASSOCIATION AND FRATERNAL

La., New Orleans.—Benevolent Knights of America of Louisiana let contract to C. Murphy Construction Co., New Orleans, to erect lodge building; fireproof; composition roof; steam heat; Otis elevator; 3 stories; Italian renaissance style; first story Indiana limestone; mottled terra-cotta brick; 3 balconies on top floor level; electric cooling system; roof garden; cost \$125,000; Emilie Well, Archt., 1312 Whitney-Central Bldg., New Orleans. (Previously noted.)

Tex., Terrell.—Knights of Pythias let contract to erect store and lodge building. (See Association and Fraternal.)

BANK AND OFFICE

Fla., Campbellton.—Central State Bank let contract to H. H. Brokn, Dothan, Ala., to erect bank building; pressed brick; completion by June 1.

Fla., Dade City.—Bank of Dade City, E. W. Stapleton, Zephyrhills, Fla., and others interested, let contract to E. W. Stoltz, Palmetto, Fla., to erect bank building; 67x30 ft.; brick; composition tar and gravel roof; city lighting; cost \$6000; Florida Engineering Co., Archt., Zephyrhills. (Previously noted.)

Mo., Maryville.—Farmers' Loan & Trust Co. let contract to Swenson Construction Co., Kansas City, Mo., to erect bank building; brick; concrete and granite; copper roof; Lutz sidewalks; cost \$65,000; Wilder & Wright, Archts., Kansas City; let contract for granite to John Swenson Granite Co., Concord, N. H. (Lately noted.)

N. C., Gastonia.—First National Bank let contract to Travers-Wood Co., Richmond, Va., and Charlotte, N. C., to erect bank and office building; 100x32 ft.; 7 stories; steel frame; fireproof; promenade tile roof; floors of reinforced concrete on steel beams; steam vapor heat (temperature control) to cost \$1000; conduit wiring, \$3500; 2 electric

Otis elevators, \$12,000; prism lights; Wilson & Sompayrac, Archts., Columbia, S. C. (Noted in Feb.)

S. C., Charleston.—Chamber of Commerce has plans by D. B. Iyer, Charleston, to remodel old library building; let contracts at \$2674 to T. W. Worthy, Charleston, for general repairs, and at \$760 to R. M. Masters, Charleston, to install steam heating plant. (Previously noted.)

Tenn., Nashville.—Herbrick & Lawrence and Warren Bros., both of Nashville, have contracts for electric wiring and glazing, respectively, in First and Fourth National Bank Bldg., for which Foster & Creighton Co., Nashville, has general contract; cost \$230,000; H. H. Hibbs, Local Archt., Nashville, representing Ludlow & Peabody, Archts., 101 Park Ave., New York. (Other contracts lately noted.)

Tex., Taylor.—P. W. Powell, Austin, has contract for general work on bank building to cost \$25,000; contract for fixtures to Southern Seating & Cabinet Co., Jackson, Tenn.; C. H. Page & Bro., Archts., Austin and Houston.

Va., Charlottesville.—People's National Bank let contract to King Lumber Co., Charlottesville, to erect bank building; 110x47 ft.; fireproof; composition roof; exterior of Indiana limestone; interior, marble; vaults and fixtures not in general contract; cost, without equipment, \$80,000; heating, \$2500; let contract for limestone to John A. Rowe Cut Stone Works, Bedford, Ind. Address general contractor. (Lately noted.)

CHURCHES

Ala., Sulligent.—M. E. church South let contract to Sam Carroll, Tupelo, Miss., to erect lately-noted building; seating capacity 600; asphalt roof; hot-air heat; cost \$6500; C. W. Carlton, Archt., Lagrange, Ga. Address Rev. W. E. Guthrie, pastor. (See Machinery Wanted—Lighting Equipment; Heating.)

Ga., Gainesville.—Grace Church let contract to C. C. Moore, Gainesville, to erect addition to building.

Mo., St. Charles.—Baptist Church let contract to E. L. Murphy, St. Charles, to erect building; about 15 Sunday-school classrooms in basement; several classrooms and auditorium on main floor; cost \$10,000.

N. C., Salisbury.—First M. E. Church South, Rev. F. F. Marr, pastor, let contract to A. R. Lazenby, Salisbury, to erect building; 85x140 ft.; fireproof; slate roof; steam heat; electric lights; cost \$50,000; construction begins in summer; O. D. Wheeler, architect, Charlotte, N. C. (Lately noted.)

Tex., Amarillo.—Sacred Heart Catholic Church, Rev. Dean Dunn, pastor, let contract to Fred Bone, Amarillo, to erect building; 106x46 ft.; cost \$20,000; heating and lighting contracts not let; Berry & Kaufman, Archts., Amarillo. (Lately noted.)

CITY AND COUNTY

Ala., Bay Minette.—Fire Stations.—City let contract to Crockett & Shollar, Bay Minette, to erect number of fire stations in different sections of town.

Tenn., Memphis.—Hippopotamus House.—City let contract at \$4970 to Franklin Paving Co., Memphis, to erect building; Moorish design; 60x40 ft., encircled with 10-ft. walk; outside cool-water pool 40x40 ft., 2 inside warm-water pools 30x24 ft. and 20x20 ft.; pools 1 to 5 ft. deep; building encased with glass; concrete foundation. (Lately noted.)

N. C., Southport.—Municipal.—City let contract to J. R. Newton, Jr., Southport, to erect building for municipal offices, fire department, etc.; 2 stories; frame.

Tex., Vernon.—Library.—City let contract to O. A. Swinburn, Vernon, to erect Carnegie Library; cost \$10,500, exclusive of plumbing, heating and lighting. (Lately noted.)

COURTHOUSES

Tex., Gilmer.—County Commrs. let contract to Southern Structural Steel Co., San Antonio, to reconstruct courthouse; cost \$18,000.

DWELLINGS

D. C., Washington.—Jas. E. Carol let contract to Winfield Preston, 1718 8th St. N. W., Washington, to erect two-story brick dwelling; cost \$5700; Rich & FitzSimmons, architects, 321 Bond Bldg., Washington.

D. C., Washington.—H. P. and K. M. Baldwin has plans by and let contract to Conrad Chaney, 230 25th St. N. E., Washington, for one-story frame dwelling; cost \$3600.

Ga., Atlanta.—Mrs. J. A. Reese will erect \$6300 brick veneer-stucco dwelling; Fulton County Home Builders, Contrs., Atlanta.

Ga., Atlanta.—Cliff C. Hatcher let contract to H. W. Nicholes & Son, Atlanta, to erect 2-story brick-veneer residence at 63 Peachtree Circle; cost \$14,500.

Ga., Atlanta.—Mrs. H. H. Johnson let contract to J. L. Dennen, Atlanta, to erect 2-story brick-veneer residence; cost \$7850.

Ga., Washington.—John W. Fanning let contract to B. A. Adams, Washington, to erect residence; Willis Irvin, Archt., Washington.

Ky., Lexington.—T. C. Rush let contract to erect residence; two stories; 8 rooms; brick.

Mo., Catonsville.—Mr. Jones let contract to Schaub Bros., 39 Newburg Ave., Catonsville, to remodel frame dwelling at Orange Grove Heights; construct porches, install baths, hot-water heat, electric lights; shingle sides, etc.; cost \$6000.

Miss., Clarksdale.—J. McI. Archer let contract to Bornman Lumber Co., Clarksdale, to erect residence; mill construction; 7 rooms; asphalt shingle roof; cost \$3000; heating about \$225; Alsop & Shangle, Archts. (Lately noted.)

Mo., St. Louis.—St. L. Altentheim let contract to Geo. Moeller, St. Louis, to erect 2-story residence at 5408 S. Broadway; cost \$10,000.

N. C., Winston-Salem.—Nat Peterson let contract to W. H. Fetter, Winston-Salem, to erect 7-room residence.

Okla., Tulsa.—H. C. Stahl, Bellevue, O., is reported to have let contract to M. A. Younkman, Tulsa, to erect number of 4 and 5-room residences.

S. C., Camden.—Camden Consolidated Farms Co. let contract to J. H. Moore, Camden, to erect several barns, tenant-houses and overseers' homes; cost \$7000.

S. C., Chester.—F. L. Whitlock let contract to W. W. Blair, Chester, to erect residence; cost \$4000.

S. C., Chester.—Dr. W. R. Wallace let contract to W. W. Blair, Chester, to erect residence; cost \$4000.

Tex., Abilene.—Dr. J. M. Alexander let contract to erect residence.

Tex., Fort Worth.—J. A. Jones is reported to have let contract to C. H. Messer, Fort Worth, to erect 2-story 8-room frame residence; cost \$4000.

Tex., Fort Worth.—J. E. Wagner let contract to Luther P. Banes, Fort Worth, to erect residence; 9 rooms; 2 stories; cost \$5000.

Tex., Houston.—Sylvan Beach Bathhouse and Hotel Co. let contract to erect 70 cottages. (See Miscellaneous.)

Va., Fredericksburg.—Victor Moon let contract to E. G. Hefflin, Fredericksburg, to erect residence; brick; tile roof; ordinary floor construction; hot-water heat; cost \$7500; Philip N. Stern, Archt., Fredericksburg. (See Machinery Wanted—Concrete Mixer.)

Va., Norfolk.—L. E. Hall let contract to A. J. Reynolds, Norfolk, to erect brick and frame residence; cost \$4000.

Va., Richmond.—James D. Spencer, 1205 N. Ave., has plans by and let contract to W. B. Green, Woodland Heights, Richmond, to erect residence; 28x26 ft.; mill construction; slate roof; electric lights; cost \$3600; hot-air heat, \$200. (Lately noted.)

W. Va., Clarksburg.—Messrs. Edw. Leatherbury, Harrison & McEntree, let contracts to J. W. Roberts, 332 Mechanic St., Clarksburg, to erect 3 dwellings on Goff Plaza; shingle, slate and tile roofs; cost \$4000 to \$5000 each; A. G. Lamont, Archt., Goff Bldg., Clarksburg. Mr. Leatherbury lately noted to erect residence.)

W. Va., Follansbee.—Robert L. Ulrich, Virginia Ave., will erect dwelling; 28x32 ft.; slate roof; Carl Boyd, Contr., Martins Ferry, O., and he may be addressed. (Lately noted to erect \$4500 dwelling.)

GOVERNMENT AND STATE

Mo., Indian Head.—Storehouse.—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract at \$24,152 to John H. Nolan Construction Co., 1413 G St. N. W.,

Washington, to alter building No. 172, Naval Proving Ground. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

Okla., Tulsa.—Deshon-Davison Co., Tulsa, has contract to install electric wiring for lights and silent-signal system in Oklahoma Hospital, for which Mangum Construction Co., Tulsa, has general contract; 4 stories; fireproof; 135x41 ft.; concrete and tile floors; steam heat; electric lights; cost \$60,000. E. Eichenfeld, Archt., Tulsa. (Previously noted.)

W. Va., Charleston.—St. Francis Hospital has plans by W. P. Gluther, Everett Bldg., Akron, O., and let general contract to W. A. Abbott and J. L. Abbott, Charleston, to erect addition to hospital; 3 stories; reinforced concrete, brick and steel stone or terra-cotta; will include administration building, 3 public wards and 19 private rooms; cost \$50,000; interior-work contracts let as follows: P. A. Donovan, electric wiring, \$1000; Burlew Hardware Co., hardware, \$900; West Virginia Heating & Plumbing Co., heating and plumbing, \$9000; stone work, Isaac Cut Stone Co., \$2500; all of Charleston.

HOTELS

Okla., Tulsa.—S. M. Bell let contract to erect business and hotel building. (See Stores.)

Okla., Tulsa.—H. R. Ketchum has plans by Geo. W. Winkler, Tulsa, and let contract to Van Horn, Brickner & Co., Tulsa, to erect hotel; 50x140 ft.; 5 stories; reinforced concrete; tar and gravel roof; electric lights; composition flooring; cost \$65,000; heating plant \$20,000; concrete sidewalks \$500; traction elevators \$6000. (Previously noted.)

MISCELLANEOUS

Ark., Blytheville.—Clubhouse.—A. Walton let contract to erect store and club building. (See Stores.)

Mo., Baltimore.—Stable.—Maryland Ice-Cream & Fruit Products Co. let contract to erect storage building and stable. (See Warehouses.)

N. C., Durham.—Stable.—Tom Rigsbee let contract to erect stable.

N. C., Durham.—Stable.—C. L. Haywood let contract to Wilkerson-Bowles Construction Co., Durham, to erect livery stable.

Tex., Houston.—Bathhouse and Cottages.—Sylvan Beach Bathhouse & Hotel Co., 606 Stewart Bldg., let contract to H. Wilkins, Houston, to erect bathhouse 140x140 ft. and 70 cottages 12x18 ft.; ordinary construction; prepared roofing; cost \$30,000; electric lights \$3000. (Lately noted.)

Va., Hopewell.—Billiard Parlor, etc.—Tri-City Amusement Co. let contract to erect theater and billiard parlor. (See Theaters.)

Va., Hopewell.—Grandstand.—Hopewell Baseball Club let contract to Vaughan Construction Co., Roanoke, Va., to erect ball park grandstand and bleachers.

Va., Pulaski.—Clubhouse.—General Chemical Co., main office, New York, let contract to D. J. Phipps, Roanoke, Va., to erect clubhouse; 108x60 ft.; sprinkler system; refrigerating plant; Clinton Mackenzie, Archt., 15 Broadway, New York.

SCHOOLS

D. C., Washington.—Dist. Commrs. let contract at \$39,990 to Burgess & Parsons, 700 10th St. N. W., Washington, to erect Powell School No. 157.

Miss., Clarksdale.—City let contract to Central Mississippi Construction Co., Jackson, Miss., to erect 2 high schools; cost \$30,000; Chas. O. Pfeil, Archt., Memphis, Tenn. (Noted in Feb.)

Miss., Yazoo City.—City has plans by R. H. Hunt & Bro., Chattanooga, Tenn., and let contract at \$30,190 to Burke Construction Co., Hattiesburg, Miss., to erect high school to accommodate 200 pupils; brick; composition roof; wood and concrete floors; steam heat; electric heat; electric lights; vacuum cleaners; telephone system; swimming pool. (Previously noted.)

Mo., St. Joseph.—School Board let contract to Lehr Construction Co., 1710 Frederick Ave., St. Joseph, to erect ward school at 31st and Lafayette Sts.; fireproof; gravel roof; cost \$65,000, exclusive of plumbing, heating and ventilating; Trunk & Gordon, Archts., St. Joseph. (Lately noted.)

N. C., Maxton.—School Board let contract to W. W. Blair, Chester, S. C., to erect school building; C. Gadsden Bayre, Archt., Anderson, S. C. (Mr. Blair lately incorrectly noted as of Bethune, S. C.)

Tenn., Nashville.—Board of Education let contract at \$1079 and \$278.25, respectively, to

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Phillips-Butterff Mfg. Co., Nashville, for roofing and marble for Elliott School; Marr & Holman, Architects, 701 Stahlman Bldg., Nashville. (Noted in January.)

Tex., Abilene.—Sambo School Dist. let contract to J. M. Bishop, Abilene, to erect school; 2 stories; 4 rooms and auditorium; cost \$3150.

Tex., Ballinger.—Cochran School Dist. Trustees let contract to erect school; cost \$3000.

Tex., Mercedes.—School Board let contract to H. J. Renneberg, Mercedes, to erect school; cost \$10,000; Lane & Dowdy, Architects, Houston. (Previously noted.)

Tex., Menard.—Menardville Ind. School Dist. let contract to J. C. Ray, Alba, Tex., to erect school building; two stories and basement; 65x90 ft.; ordinary construction; Barrett specification tar and gravel roof; schoolroom heaters; electric lights; cost \$17,500; C. H. Leimbach, Archt., 1105 Southwestern Bldg., Dallas; construction begins in about 30 days. Address Contr. (Noted in Feb.)

Tex., Oakville.—School Trustees let contract to erect 2-story frame school; cost \$5000. (Previously noted.)

STORES

Ala., Altoona.—Wagon Hardware Co. let contract to J. R. Ray to erect store building; 43x100 ft.; 1 story; brick; mill construction; felt roofing; cost \$3000; Chas. Malcolm, Archt., Altoona, who may be addressed. (Lately noted.)

Ark., Blytheville.—A. Walton let contract to H. C. Lesmeister, Jonesboro, Ark., to erect store and club building; 50x110 ft.; ordinary mill construction; composition roof; hot-water heat; cost \$18,000; T. E. Mitchell, Archt. (Lately noted.)

D. C., Washington.—M. Wilson Offutt let contract to F. F. Robey, 429 Alton Pl. N. W., Washington, to erect store building; cost \$3500; C. W. Chappell, Archt.

Fla., Ellenton.—E. W. Stapleton, Zephyrhills, Fla., let contract to E. W. Stoltz, Palmetto, Fla., to erect store building; 30x75 ft.; brick; composition tar and gravel roof; tile floor; city lights; cost \$3600; Florida Engineering Co., Zephyrhills; construction begins Feb. 15.

Ga., Macon.—Jos. N. Neel let contract to W. B. Paulin, Macon, to erect store building; 20x114 ft.; tar and gravel roof; cost \$5000; Nisbet, Brown & Dunwoody, Architects, Macon. (Lately noted.)

La., New Orleans.—Maison Blanche Co. let contract to Realty Construction Co., Birmingham, Ala., to erect annex to department store on Dauphine near Canal St.; fireproof; built-up roof; steam heat; Otis elevators; Emile Well, Archt., New Orleans. Address Contractor. (Previously noted.)

Md., Baltimore.—Hutzel Bros. Co. let contract to Morrow Bros., 1201 Fidelity Bldg., Baltimore, to erect addition to store building; 5 stories; 100x75 ft.; fireproof; slag roof; heating and lighting not determined; cost \$100,000; Baldwin & Pennington, Architects, Professional Bldg., Baltimore; let contract to D. C. McAleer Contracting Co. for excavating. (Lately noted.)

Mo., St. Louis.—Murch Bros. Construction Co., general contractor to erect store and office building for Front Realty Co., let sub-contracts. (See Apartment-houses.)

Okla., Tulsa.—S. M. Bell, 230 N. Main St., will erect 2-story brick business and hotel building; 25x90 ft.; brick and concrete; gravel roof; private lighting plant; cost \$6500; Davis & Price, Architects, 415 N. Main St.; F. M. Kelly, Contr., both of Tulsa.

S. C., Aiken.—Holley Hardware Co. let contract to J. A. Holley, 15th St., Augusta, to erect store building; 47.6x150 ft.; 2 stories; brick; terra-cotta front; cement floors; metal roof; electric lighting; cost \$15,000; steam heat \$600. (Noted in Feb.)

S. C., Bethune.—G. B. King & Son let contract to W. W. Blair, Chester, S. C., to erect store and garage building; 70x90 ft.; one story; metal ceiling and plate-glass front in store; cement floor in garage; cost \$4000.

S. C., Charleston.—I. Silver & Bro. let contract to Simons-Mayrant Co., Charleston, to erect store building for J. R. Read Co.; ordinary construction; tin roof; electric lights; cost \$20,000; D. B. Hyer, Archt., Charleston. (Lately noted.)

Tenn., Memphis.—W. P. Hale, Osceola, Ark., let contract to Jos. Barti & Son, Memphis, to erect store and apartment building; 20x85 ft.; 2 stories; concrete roofing; 1-story fireproof building in rear 25x45 ft.; cost \$10,000; steam heat \$500; M. M. Johnston, Archt., 1799 Linden Ave., Memphis, who may be addressed. (Lately noted.)

Tex., Austin.—C. W. Moore, Austin, has contract to erect Bledsoe store building; cost \$7000; C. H. Page & Bro., Architects, Austin and Houston.

Va., Lynchburg.—Judge F. P. Christian let contract to Smoot & Sheehan, Lynchburg, to erect store building; 26.6x122 ft.; 2 stories; brick; slag roof; wood joists 2d and roof; concrete flooring on first floor; cost \$6200; Heard & Cardwell, Architects, Lynchburg. Address architects. (Lately noted.)

Va., Roanoke.—J. Perry let contract to W. H. Mason, Roanoke, to repair store building lately noted damaged by fire; cost \$10,000.

Va., Norfolk.—Thomas Ballentine estate let contract to E. M. Forbes to remodel store fronts at 500-02 Main St.

THEATERS

Ga., Atlanta.—W. T. Murray and Geo. Phelias let contract to Chas. W. Bernhardt, 195½ Marietta St., Atlanta, to erect moving-picture theater; 35x137 ft.; seating capacity 1000, with balcony; composition and tin roof; heating from low-pressure cast-iron boiler, fan blast radiation; city lighting; total cost \$20,418; A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta. Address contractor.

Va., Hopewell.—Tri-City Amusement Co., Thos. Temple, Pres., let contract to Adams & Martin to erect Marcella Theater and bil-

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressors.—Navy Dept., Bureau of Supplies and Accounts, Washington, D. C. Bids until Feb. 21 to furnish two air compressors; 11x11x12 in.; delivery Philadelphia; schedule 3360.

Air Compressor.—American Metallic Packing Co., Walnut and Clark Sts., Lexington, Ky.—First-class second-hand straight line, steam-driven, 150 cu. ft. air compressor complete.

Barrels.—Harry Borton, Dixie Pickling Co., 3237 Arlington St., Philadelphia, Pa.—Prices on 3000 to 5000 new paraffined oak barrels for new plant at Urbana, Va., and on additional barrels for another plant.

Bleaching Machinery.—Planters' Oil Co., Albany, Ga.—Data and prices on equipment to bleach linters for nitrating.

Boiler.—See Crusher and Pulverizer, etc. Viola White Lime Co.

Boiler and Engine, etc.—Southwestern Engineering Co., Littlefield Bldg., Austin, Tex.—Prices on 75-hp. by 20-ft. boiler to carry 125 lbs. steam, and 2 Cochran water-heaters for this boiler; also 100 H. P. engine direct connected to 75 K. W. generator, three 10 H. P. motors and 5 H. P. motors.

Boiler.—Roanoke Spoke & Handle Co., Jas. P. Garrett, Sr., Pres., Roanoke, Va.—Prices on 125 to 150 H. P. boiler, suitable for steaming with green hickory sawdust only.

Boilers.—McDonough Compress Co., Box 490, Atlanta, Ga.—Prices on self-contained vertical boilers, requiring no brick work setting; 175-200 lbs. working pressure; 120-125 H. P. each; may need 4 or 6 of these boilers about May 1.

Brick.—See Building Materials.—Dr. W. S. Rosenheim.

Bricks.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—30,000 converter and open-hearth silica bricks; fire bricks; schedule 3385.

Bridge Construction.—Coosa County Commrs., Rockford, Ala.—Bids until Feb. 22 to construct steel bridge across Hatchett Creek near mouth of Weogufka Creek; Lofton Thomas, Judge of Probate.

Bridge Construction.—Augusta County Supr., Courthouse, Staunton, Va.—Bids until Feb. 23 to construct superstructure of 5 steel bridges; details and specifications obtainable from R. W. Moore, Supt. of Roads, Rooms 3 and 4, New County Bldg., Staunton.

Bridge Construction.—Board Drainage Commrs. and Union County Fiscal Court, Morgantown, Ky.—Bids addressed to John Bingham, County Clerk, until Feb. 21 to construct 7 steel bridges to be built in connection with Dennis O'Nan Public Ditch;

hard parlor; 25x110 ft.; 2 stories and basement; brick; pressed brick front; main auditorium equipped with 24 automatic valve plugs and automatic ventilating system; seating capacity 400; electric plant in basement; lobby finished at cost of \$1500; Richard A. Munden, Archt., Petersburg, Va.

WAREHOUSES

La., Slidell.—Morgan & Schneider let contract to erect warehouses and other buildings in North Slidell; cost \$10,000; completion by April 15.

Md., Baltimore.—Mt. Vernon-Woodberry Mills let contract to Cogswell-Koether Co., 406 Park Ave., Baltimore, to erect warehouse; 4 stories; fireproof; cost \$20,000; Jos. Evans Sperry, Archt., 409 Calvert Bldg., Baltimore.

Md., Baltimore.—Maryland Ice Cream & Fruit Products Co., 17-19 W. Pratt St., let contract to Jas. A. Tarr & Co. to erect storage building and stable at 234-26 York St.; brick; 50x80 ft.; cost \$4000; T. R. West, Archt., 1804 Moreland Ave., Baltimore.

Tex., Austin.—Boss & Koock let contract to Jacob Wattinger, Austin, to erect warehouse; 3 stories; 90x109 ft.; fireproof; brick and reinforced concrete; cost \$30,000; C. H. Page & Bro., Architects, Austin and Houston. (Lately noted.)

plans and specifications at County Clerk's office, or office of Norman R. Orcutt, Chief Engr. Drainage Commission, both at Morganfield.

Building Materials.—L. E. Dixon, Archt., East Radford, Va.—Catalogues pertaining to his profession.

Building Materials.—State Board of Control, Charleston, W. Va.—Bids on building materials, plumbing, electrical, heating and complete hydro-therapy supplies for \$25,000 State hospital at Spencer, W. Va.

Building Materials.—Dr. W. S. Rosenheim, Williamson, W. Va.—Prices on roofing material (slate, asphalt or asbestos shingles), bricks, metal laths, heating plant, lighting system, stained windows and metal window frames for \$29,000 church building.

Building Materials.—Pritchett & Henderson, Dudley Bldg., Danville, Va.—Alternate bids on metal window frames ("Fenestration," etc.), metal lockers, terra-cotta, maple floors, metal ceilings, etc., for \$35,000 school.

Building Materials.—Jackson County Realty Co., Tuckerman, Ark.—Prices on brick, lime, cement, roofing, lumber, doors and windows for \$4000 building.

Butter Machinery.—See Peanut Machinery.—Felix K. West.

Cable.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Feb. 21 for delivering electrical cable at Navy-yard, Charleston, S. C. Apply for proposals to supply officer, Navy-yard, Charleston, or to Bureau.

Car.—Pennsylvania Equipment Co., Philadelphia, Pa.—Second-hand 12-15-ton capacity standard gauge push car.

Cars.—Jewell Ridge Coal Corp., Coalidan, Va.—Gasoline-driven combination coach for hauling about 25 passengers and equal weight of baggage or express; for small spur off main line of 4-ft. 8½-in. gauge railroad.

Cars.—H. M. de Montmolin, Palatka, Fla. Addresses of manufacturers of and dealers in standard gauge storage battery cars; for interurban railways; new and second-hand.

Cars (Logging).—See Rails and Cars.—Harmount, Hall & Co.

Chemicals, etc.—Bhagatram Malavamal & Co., Majeth Mandi, Amritsar, India.—Interested in chemicals and sundry goods; view to representation.

Church Equipment.—Dr. W. S. Rosenheim, Williamson, W. Va.—Prices on pulpit and altar equipment for \$20,000 church.

Concentration (Zinc) Plant.—John G. Duncan Co., 308 W. Jackson Ave., Knox-

ville, Tenn.—Data on cost erection and machinery for concentration plant; 100 tons zinc ore daily; extract by flotation or other better process; give cost of machinery (both new and second-hand) and erection separately.

Concrete Mixer.—E. G. Hedlin, Fred ericksburg, Va.—Prices on concrete mixer.

Cork.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—5000 sq. ft. compressed sheet cork; delivery Philadelphia; schedule 3387.

Cotton Linters Machinery.—Farmers' Cotton Oil & Trading Co., Uniontown, Ala.—Data and prices on machinery for manufacturing bleached cotton linters.

Cotton Cloth.—Navy Dept., Bureau of Supplies and Accounts, Washington, D. C.—Bids for furnishing 500,000 yds. bleached and shrunk cotton drill, delivery Brooklyn and Charleston, schedule 3385; 30,000 yds. bleached drill, delivery Charleston, schedule 3373.

Crusher and Pulverizer, etc.—Viola White Lime Co., J. H. Montgomery, Pres., Bromide, Okla.—Prices on 30 or 40 H. P. boiler, crusher and pulverizer.

Curbing, etc.—A. G. Ricks, Commr., New Orleans, La.—Bids until Feb. 14 to construct subsurface drains, wooden curb, wooden headers and shell footwalks in connection with improvement of concession area at West End Lake Shore Park; plans and specifications on file with City Engr.

Doors and Windows.—See Building Materials.—Jackson County Realty Co.

Doors.—Port Commrs., 407 Realty Bldg., Jacksonville, Fla.—Bids until Feb. 28 to furnish in place complete for operation on pier sheds of municipal docks and terminals; 3 doors to close openings about 20 ft. wide by 9 ft. 6 in. high, and 4 doors to close openings about 18 ft. 3½ in. wide by 17 ft. 6 in. high; doors to be designed by bidders and to conform to steel building having brick floors as to insurance feature; detailed information of openings for which doors are to be provided may be had on application to J. C. O'Dell, Gen. Mgr., Room 405, Realty Bldg., Jacksonville.

Drainage System.—Rum Neck Drainage Dist. Commrs., M. L. Breland, Commr., Holly Hill, S. C.—To let contract Feb. 25 to construct canal about 4 mi. long, 3 to 10 ft. bottom width, 2 ft. 2 in. to 4 ft. deep; excavation about 14,740 cu. yds.; completion within 6 months after date of contract.

Dredge Bucket.—Harvey Co., 113 South St., Baltimore, Md.—1-yd. orange-peel bucket.

Drying Machinery.—See Mining Machinery.—W. M. D.

Electric Plants.—Plant, Box 35, Southport, N. C.—Second-hand 220-volt, 60-cycle, 3-phase, alternating current, 50 to 75 K. W. generator, complete with switchboard, exciter, etc.; also steam or oil engine; full description and cash price.

Electrical Machinery.—See Boiler and Engine, etc.—Southwestern Engineering Co.

Electrical Machinery.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Eight 5 K. W. radio motor generators, 8 contractor type automatic panels, 12 radio transformers, delivery Norfolk, schedule 9405; 20 120-volt electric heaters, delivery Brooklyn, schedule 3388.

Electrical Machinery.—F. L. Williamson, 409 Scarritt Bldg., Kansas City, Mo.—Belted alternator, 60-cycle, 3-phase, 220-volt, revolving field, 200 to 300 K. W., with exciter and switchboard; belted alternator, 50 to 100 K. W., for same current, or one high-grade steam generating set for 100 to 200 K. W. exciter and switchboard; 3-phase induction motors, 220-volt, from 10 to 50 H. P.; transformers for same and switchboard for alternators.

Electrical Machinery.—H. O. Hendrick, Brundidge, Ala.—Price and catalogue on small electric-light plants, suitable for operating motion-picture machines.

Electrical Machinery.—H. M. McClure, Brundidge, Ala.—Prices on second-hand motors, direct and alternating current.

Electrical Machinery.—N. E. Walker, manufacturers' representative, Raleigh, N. C.—25 or 30 K. W., 500 to 600-volt, direct current generator; elevator motor, 3-phase, 60 cycle, 220-volt.

Electrical Work.—See Building Materials.—State Board of Control.

Engine.—Isaac Eggors, Beech Creek, N. C.—Second-hand 10 H. P. engine.

Engine.—Saml. T. Williams, Engr., 221 N. Calvert St., Baltimore, Md.—75 H. P. steam engine; automatic; medium or high speed; first-class addition; consider Corliss.

Graphite Machinery.—See Mining Machinery.—W. M. D.

Engine (Corliss).—R. P. Johnson, Wytheville, Va.—Good second-hand 100 H. P. Corliss engine; state make, condition, dimensions, location, best price and time of delivery.

Engine (Hoisting).—Harvey Co., 113 South St., Baltimore, Md.—8½x10 three-drum hoisting engine.

Envelope Machines.—Jas. W. Booth, care Traffic Dept., Tampa & Gulf Coast R. R. Co., Tampa, Fla.—Prices on envelope machines.

Hardware, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Mch. 21 for delivering cork discs, gaskets and washers, hardware, etc., brass marking plates, steel wire rope, lump rosin, grease and steel springs, steel tubing and sheet zinc at Navy-yard, Norfolk. Apply for proposals to supply officer, Navy-yard, Norfolk, or to Bureau.

Heating.—See Building Materials.—State Board of Control.

Heating.—Rev. W. E. Guthrie, pastor First M. E. Church South, Sulligent, Ala.—Prices on heating for \$6500 church building.

Heating Plant.—See Building Materials.—W. S. Rosenheim.

Heating System.—Walter G. Shadday, Gen. Contr., Athens, Tex.—Prices on heating system with ventilating.

Heaters (Water).—See Boiler and Engine, etc.—Southwestern Engineering Co.

Hollow Tile.—Francis M. Miller, Box 28, De Land, Fla.—Information on hollow tile.

Hospital Supplies.—State Board of Control, Charleston, W. Va.—Bids on hydrotherapy supplies for \$25,000 State hospital.

Hoists, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Mch. 21 for delivering chain hoists and steel tanks at Navy-yard.

Hoist (Electric).—See Machine Tools, etc.—Navy Dept.

Ice Machinery.—Southwestern Engineering Co., Littlefield Bldg., Austin, Tex.—Prices for a. b. San Antonio, Tex., on 65-ton second-hand ice machine, first-class condition; also on new machine, same size.

Knitting Machinery.—E. D. Green, Greer, S. C.—Prices on complete equipment for small hosiery mill.

Knitting Equipment.—L. Mehler, Waynesboro, Va.—Data and prices on 10 litters and accompanying equipment to manufacture underwear.

Knitting Machinery.—Cerro Gordo Hosiery Mills Co., J. H. Williamson, Cerro Gordo, N. C.—Data and prices on 30 hosiery knitting machines with accompanying equipment; probably steam or oil power plant.

Labeling Machine, etc.—H. H. Phelps, manufacturers' agent, Atlanta, Ga.—Machine for filling jellies and marmalades in glass containers; also labeling machine for various sizes glass containers.

Laundry Machinery.—See Machine Tools, etc.—Navy Dept.

Lighting Equipment.—Rev. W. E. Guthrie, pastor M. E. Church South, Sulligent, Ala.—Prices on lighting equipment for \$6500 church.

Lighting System.—See Building Materials.—Dr. W. S. Rosenheim.

Locomotive.—American Metallic Packing Co., Walnut and Clark Sts., Lexington, Ky.—Used Porter 36-in. gauge 12-ton steam locomotive; first-class condition; cheap for cash.

Locomotive.—Bureau Yards and Docks, Navy Dept., Washington, D. C.—Bids until Mch. 25 for furnishing at Navy-yard, Philadelphia, 35-ton switching locomotive; specifications (No. 2214) obtainable on application to Bureau or to Commandant of navy-yard named.

Lockers.—See Building Materials.—Pritchett & Henderson.

Machine Tools, etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Four variable speed gears at Brooklyn; electric traveling hoist at Charleston; laundry machinery at Brooklyn; 2 horizontal centrifugal pumps at Brooklyn; schedules 9383, 9384, 9403 and 9382.

Mail-handling Devices.—Treasury Department, Supervising Archt.'s Office, Washington, D. C.—Bids until April 18 for mail-handling devices, etc., in U. S. postoffice and courthouse at New Orleans, in accordance with specification and drawing, copies of which may be obtained at office of Archt.

Manufactured Products.—Manuel Garcia, San Jose, Costa Rica, C. A.—Writes to Manufacturers Record: Many merchants in these States are especially handling cotton goods, drilling, coverings, Indian chintz and other kinds of chintz; also interested in silk

goods, crepe and stockings, iron hardware, druggists' supplies, conserves, machinery for farm use; if manufacturers would be willing to give me agency for Central America, they would be satisfied with my services; am well acquainted with conditions of our merchants and markets.

Merchandise (General).—See Chemicals, etc.—Bhagatram Malavaram & Co.

Metal Ceiling.—See Building Materials.—Pritchett & Henderson.

Metal Hoops.—E. T. Roux & Son, Plant City, Fla.—Galvanized hoops for tanks.

Metal Laths.—See Building Materials.—Dr. W. S. Rosenheim.

Metal Window Frames.—See Building Materials.—Dr. W. S. Rosenheim.

Metal-working Tools.—See Tinner's Tools.—C. L. Wiseman.

Metals.—See Piping, Metals, etc.—R. S. Rippinville.

Milling Machine.—Moran Flexible Steam Joint Co., 115 N. 3d St., Louisville, Ky.—No. 3 second-hand miller, with dividing head, in good condition.

Mineral Wool.—Fowler-Flemister Coal Co., Milledgeville, Ga.—Prices on 10 to 12 tons mineral wool.

Mining Machinery.—W. M. D., care Manufacturers Record.—Data and prices on machinery for mining, washing and drying graphite.

Oil Mills.—Edgar Hightower, Brundidge, Ala.—Price and catalogue on peanut oil refining machinery.

Paving.—City of College Park, Ga.—Bids until April 3 to construct 1500 sq. yds. tile or cement walks on Cambridge Ave.; specifications on application to W. M. Alexander, Clerk.

Paving.—Comms. (C. H. Murphy, R. N. Garrett and H. Wade), Eldorado, Ark.—To open bids Mch. 21 on paving; concrete, asphaltic concrete; curb, grading and drainage; \$38,500 available; Engrs., Ford & MacCrea, Little Rock, Ark.

Paving, etc.—Comms. Street Improvement Dist. No. 24, W. H. Mann, Secy., Little Rock, Ark., and Street Improvement Dist. No. 9, Pulaski Heights, Ark.—Bids until Mch. 15 to grade, curb, gutter, drain and pave streets with either water-bound macadam, asphalt-surfaced macadam or concrete; 40,000 cu. yds. grading, 41,000 lin. ft. curbs and gutters, 55,000 sq. yds. paving; plans and specifications on file with Dickinson & Watkins, Engrs., 610 State Bank Bldg., Little Rock; copies may be obtained for \$2.

Paving.—Baltimore (Md.) Board of Awards, City Hall.—Bids until Mch. 15 to grade, curb and pave with sheet asphalt, vitrified block and granite block, all on concrete base, Cross St. from Scott to Ramsay St., James from Bayard to Cross St., Ramsay St. from Cross St. to Fremont Ave., Ramsay St. from Fulton Ave. to Carey St., Scott St. from Ostend to Lombard St., Gilmor from south end to Lexington St., Wilkens Ave. from Fulton Ave. to Gilmor St., Hamburg St. from Scott to Cross St.; 53,900 sq. yds. sheet asphalt; 11,610 sq. yds. vitrified block; 3430 sq. yds. granite block paving; 3150 sq. yds. granite block repaving; specifications and proposal sheets obtainable from Paving Com., R. Keith Compton, Chrmn. and Consult. Engr., 214 E. Lexington St., for \$5; plans and profiles on file with Consult. Engr.

Paving.—Town of West Asheville, N. C., H. B. Posey, Clerk.—Bids until Mch. 13 to construct 33,000 sq. yds. paving on Haywood Rd.; consider brick, sheet asphalt, bitulithic and asphalt-concrete; specifications and maps obtainable from Chas. E. Waddell, Engr., 78 Patton Ave., Asheville.

Peanut Machinery.—Felix K. West, Secy. Ardmore Chamber of Commerce, Ardmore, Okla.—Machinery for manufacturing peanut butter and other peanut by-products.

Piping.—Jas. Powell, Granville County Clerk, Oxford, N. C.—Bids until Mch. 30 to furnish following quantities in 12-ft. sections: 900 ft. 12-in. metal pipe; 12 ft. 24-in. metal pipe; D. H. Winslow, Engr., Washington and Atlanta Highway.

Pipe and Fittings.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Cast-iron pipe fittings at Boston; malleable-iron pipe fittings at Mare Island; 18 steam traps at Norfolk; malleable-iron unions at Boston; 624 malleable-iron unions at Mare Island; 8 crusher reducing valves at Philadelphia; schedules 9397, 9401, 9398, 9397, 9401 and 9398.

Piping, Metals, etc.—R. S. Rippinville, sales manager District Iron & Steel Co., Winchester House, Birmingham, England.—Writes to Manufacturers Record: "Inter-

ested in tube and fittings; in position to accept (for American manufacturers) seamless, welded tubing, heavy gauge welded tubing, brazed tubing, copper or brass tubing, steam, water and gas tubing and fittings. Put me in touch with any American manufacturer who requires selling agent in this country; prefer to work on commission; prepared to take up entire organization of sales department in British Isles."

Planer and Matcher.—Dawson Variety Works, Dawson, Ga.—Good second-hand planer and matcher. Give weight and price.

Platform (Freighthouse and Automobile).—Pennsylvania R. R. Co., A. C. Shand, Ch. Engr., 607 Broad St. Station, Philadelphia, Pa.—Bids until Mch. 28 on contract No. 11-B, inbound freighthouse and automobile platform in Federal St. yard, Philadelphia.

Plumbing.—See Building Materials.—State Board of Control.

Power Plant.—See Knitting Machinery.—Cerro Gordo Hosiery Mills Co.

Printing Machinery.—Jas. W. Booth, care Traffic Dept., Tampa & Gulf Coast R. R. Co., Tampa, Fla.—Prices on equipment for printing plant.

Preserving Machinery.—See Labeling Machine, etc.—H. H. Phelps.

Pump.—S. D. Brookins, Monticello, Ark.—Prices on small pump for swimming pool.

Pumps.—See Machine Tools, etc.—Navy Dept.

Quarry Equipment.—Majestic Gray Marble Co., Box 609, Knoxville, Tenn.—Modern equipment for quarrying marble; steel derrick, hoisting engine, boiler, channeller, drills, air compressor.

Rails and Spikes.—J. G. Granbery, 412 W. 40th St., Savannah, Ga.—To rent or buy nine tons of 12-lb. railroad iron with spikes.

Rails and Cars.—Harmount, Hall & Co., Prestonia, W. Va.—Prices on small amount relaying rails and a few 36-in. logging cars.

Refrigerators.—Navy Dept., Bureau of Supplies and Accounts, Washington, D. C.—35 refrigerators; delivery Philadelphia; schedule 9371.

Road Construction Materials.—W. M. Pursfull, Mayor, Hazard, Ky.—Data on materials for street and road construction—macadam, brick, concrete, etc.

Road Construction.—Comms. Craighead County Road Dist. No. 1, John R. Turney, Secy., Courthouse, Jonesboro, Ark.—Bids until April 6 to construct 13 mi. asphalt road with gravel base and 3 mi. gravel road with necessary bridges, culverts, etc.; road requires 67,000 cu. yds. excavation and is suited for use of tractor equipment; plans and specifications obtainable from Lund & Hill, Engrs., Little Rock, Ark., for \$5; bids received for work as whole or any part or parts thereof.

Road Construction.—Wilcox County Comms., J. N. Stanford, Chrmn., Camden, Ala.—Bids until April 3 to construct clay and sand or clay and gravel road from Snow Hill east to distance that will cost \$10,000, and from Snow Hill west to distance that will cost \$10,000, being about 8 mi. each way; also to construct similar road from Camden, Oak Hill and Pineapple Highway toward Boykin bridge to distance that will cost \$2500, and from Boykin bridge toward residence of D. H. Sharpe to distance that will cost \$2500; profiles and specifications to be on file with Blair Hughes, County Road Supervisor, by April 1.

Road Construction.—Talbot County Comms., Easton, Md.—Bids until Mch. 21 to construct 1½ mi. State-aid highway upon or along Claiborne Rd. from McDaniel Station to Claiborne; bids to be made on blank forms furnished by State Roads Com., 601 Garrett Bldg., Baltimore; plans can be seen and forms of specification and contract obtained for \$1 from State Roads Com.; Frank W. Seth, County Roads Engr., Easton.

Road and Street Construction.—Hamblen County Turnpike Comms., W. D. Bushong, Chrmn., Morristown, Tenn.—Bids until Apr. 1 to grade and macadamize about

40 mi. public highway and street improvements, including furnishing vitrified drain pipe, corrugated-iron culvert pipe, concrete and stone masonry; plans and specifications on file after Mch. 15; obtainable for \$10 from Henry B. Havelly, Engr., Morristown.

Road Machinery.—W. T. Harris, Mayor, and W. M. Berry, County Judge, Morganfield, Ky.—Prices on dump wagons, scarifiers, rollers, excavators and other supplies for contractors.

Roofing.—See Building Materials.—Jackson County Realty Co.

Roofing.—See Building Materials.—Dr. W. S. Rosenheim.

Roofing.—J. S. Andrews, 212 12th St., Miami, Fla.—Prices on composition roofing and tile roofing.

Roofing (V Crimp).—Harry Borton, Dixie Pickling Co., 3337 Arlington St., Philadelphia, Pa.—Prices on 132 squares 2 V crimp galvanized sheet iron roofing, 28 gauge, for construction at Urbana, Va.

Salt.—Harry Borton, Dixie Pickling Co., 3337 Arlington St., Philadelphia, Pa.—Prices on 5 carloads salt.

Saws.—Trafford Heading Co., C. E. Murray, Propr., Decherd, Tenn.—Prices on Jumbo Trever or Gerlock heading saw; also power feed circular cutoff saw; for installment Trafford, Ala.

Seating.—Willis Irvin, Washington, Ga.—Prices on 350 opera chairs in good condition; state prices and full description in first letter.

Sewage-disposal Plant.—Briggs Rengor, City Secy., City Hall, Ennis, Tex.—Bids until Mch. 10 to construct sewage-disposal plant, according to plans by N. Werenkiold, Consult. Engr., Dallas, Tex.; plans and specifications obtainable from City Secy. for \$10; W. D. Farris, Mayor.

Shuttle Blocks and Machinery.—A. E. Robertson, Box 186, Marietta, Ga.—Addresses of dealers in shuttle blocks; also of manufacturers of and dealers in shuttle block machinery.

State Roofing.—J. R. Ellis, 1636 Binton Ave., Memphis, Tenn.—Prices on state roofing.

Stained Windows.—See Building Materials.—Dr. W. S. Rosenheim.

Steel Tanks.—Navy Dept., Bureau of Supplies and Accounts, Washington, D. C.—Bids until Mch. 21 to furnish 128 steel tanks; 16 in. diam. by 16 long; delivery Brooklyn; schedule 9359.

Tanks (Steel).—See Hoists, etc.—Bureau Supplies and Accounts.

Theater Equipment.—Willis Irvin, Washington, Ga.—Prices and catalogues on theater equipment.

Tile (Hollow).—J. S. Andrews, 212 12th St., Miami, Fla.—Prices on hollow building tile.

Tinner's Tools.—C. L. Wiseman, Keyser, W. Va.—Catalogues and price lists of tinner's tools (both hand and power), such as used for making buckets, tubs and wash-bowls, of tin, copper and galvanized iron.

Tubing.—See Piping, Metals, etc.—R. S. Rippinville.

Wagons (Dump).—See Road Machinery.—W. T. Harris, Mayor, and W. M. Berry, County Judge.

Washing (Graphite) Machinery.—See Mining Machinery.—W. M. D.

Well-drilling Machinery.—O. L. Hall, Hartland Oil & Gas Co., Clay, W. Va.—Interested in well-drilling machinery.

Wood Pulp Machinery.—Wm. B. Boaz, Prest.-Mgr. Boaz Emergency Mfg. Co., 2427 Central Ave., Hamilton, O.—Prices on wood pulp machinery.

Woodworking Machinery.—Rankin Coffin & Casket Co., High Point, N. C.—Prices on machinery to manufacture coffins and caskets.

Woodworking (Stave and Heading) Machinery.—Blount Springs Co., Blount Springs, Ala.—Prices on equipment for stave and heading plant; medium capacity.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Fort Payne.—Alabama Great Southern R. R. will soon invite bids for 21 mi. of second track in this (De Kalb) county, beginning near Fort Payne and extending to Flanders. C. Dougherty, Cincinnati, O., is Ch. Engr.

Ark., Little Rock.—Little Rock & Hot Springs Electric Ry. Co. plans to build line from Little Rock to Hot Springs, Ark., about

50 mi. M. B. Moore of Little Rock is Pres. Ark., Little Rock.—St. Louis, Iron Mountain & Southern R. R. (Missouri Pacific System) will, it is announced, make improvements to cost \$2,000,000 in Arkansas during 1916, this being over and above sums spent for repair of flood damage. Work will include ballasting of tracks and laying of rails, construction of sidetracks and general im-

(Continued on Page 74.)

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FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Oxford.—People's Bank of Oxford is to be chartered; capital \$25,000. Business is to begin about Mar. 15. Jos. Keith, Pres.; E. H. Hawkins, Cash.

Ga., Macon.—Macon Loan & Savings Bank has begun business with G. Browne as Cash.

Ky., Harlan.—A new bank is being organized by J. R. Creech and Cam Ball.

Md., Overlea.—The Overlea Bank, Incptd., capital \$20,000; surplus \$5000; will begin business about April 1. John S. Biddison, Pres.; John L. Dippel, V.-P.; Wm. H. Seward, Cash.

Mo., St. Louis.—Kaufman-Smith-Ernest Investment Co., capital \$300,000, has filed articles of incorporation. Incorporators: James F. Brady, Jr., H. M. Kauffman, Tom K. Smith, Fred Ernest and R. W. Stumpe.

N. C., Asheville.—Asheville Morris Plan Co., capital \$50,000, is being organized by

Fred A. Hull and business is expected to begin in about thirty days. Officers and directors not yet elected.

Mo., Monroe City.—Home Building & Loan Association, chartered and incorporated, began business Feb. 1; capital \$150,000. Wm. L. Ely, Pres.; L. M. Wood, V.-P.; T. M. Boulware, Secy. and Treas.

N. C., Davidson.—Bank of Davidson, capital \$25,000, is organized to take over the Davidson Branch of the American Trust Co.; John L. Douglas is Pres.; James Lee Sloan, V.-P., and W. H. Thompson, Cash.

N. C., Davidson.—Bank of Davidson, which succeeds the local branch of the American Trust Co., is organized with \$10,000 capital. J. L. Douglas, Pres.; J. L. Sloan, V.-P.; W. H. Thompson, Cash; C. A. Potts, Asst. Cash.

Tex., San Antonio.—Wimer-Richardson & Co., capital \$100,000, Incptd. by Kenneth Wimer, E. R. Richardson and Graham Dandell to do a loan business.

Va., Hopewell.—Greek-American Savings Bank, capital \$10,000 to \$50,000, is organized with S. A. Morris, Pres.; Z. V. Berry, V.-P.; M. B. Culpeper, Jr., Secy. and Treas.

NEW SECURITIES

Ala., Tusculum.—\$20,000 city debt, school and street bonds are voted. Address The Mayor.

Ark., Hagler.—\$10,000 high school building bonds Hagler Special School Dist., Arkansas county, have been purchased by Gunter & Sawyers, Little Rock.

Fla., Clearwater.—\$120,000 bonds Lake-Cross Bayou Drainage Dist., Pinellas county, have been purchased by Madison Bond Co., Madison, Wis.

Fla., Clearwater.—Bids were received until 10 A. M. Feb. 7 by Dixie M. Hollins, Supt. Public Instruction Pinellas County, for \$20,000 6 per cent. 25-year school bonds. Award not stated.

Fla., Clearwater.—The \$169,000 5 per cent. 30-year Pinellas county courthouse and jail bonds recently voted have been validated by Judge O. K. Reeves.

Fla., Cocoa.—Bids will be opened about May 1 for \$35,000 6 per cent. \$500 denomination bonds, maturing \$7000 every five years. J. M. Sanders is Mayor.

Fla., De Funiak Springs.—Election is to be held Apr. 4 to vote on \$10,000 sewer, \$500 light, \$3000 water, \$4000 cemetery-improvement, \$10,000 street, \$2000 park, \$3000 outstanding indebtedness, \$2000 jail bonds. Address The Mayor.

Fla., De Land.—Petition is being circulated calling for an election to vote on \$60,000 school-building bonds. S. A. Wood, V. M. Fountain and T. E. Arnold, Trustees De Land School Dist.

Fla., Kissimmee.—Election is to be held in April to vote on \$250,000 bonds Third Commrs.' Dist., Osceola county. Address County Commrs.

Ga., Acworth.—\$5000 water and light bonds recently voted are 5 per cents, maturing Dec. 31, 1917, to Dec. 31, 1924, inclusive; denomination \$500. P. O. McLain is City Clerk.

Ga., Eatonton.—\$30,000 5 per cent. 30-year school bonds are voted. John W. Adams is City Clerk.

Ga., Garfield.—\$10,000 school-building bonds are voted. Address The Mayor.

Ga., Metter.—Election is to be held Feb. 30 to vote on \$8500 5 per cent. \$500 denomination electric-light bonds; dated Apr. 1, 1916; maturity 1926 to 1946, inclusive. M. E. Everett is Clerk City Council.

Ga., Newnan.—\$55,000 5 per cent. school bonds are voted. H. C. Arnall is Mayor and John P. Shackelford, City Clerk.

Ga., Rome.—\$40,000 5 per cent. 30-year \$100 denomination municipal building and auditorium bonds, dated Apr. 1, 1916, are voted. Bids for same will be received until 8 P. M. March 16. W. M. Gammon is First Commr. and Hugh McCrary Secy.

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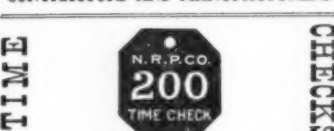
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Ga., Winder.—\$22,000 5 per cent. 30-year high-school building bonds voted Mch. 3 have been purchased by J. H. Hillsman & Co., Atlanta, Ga. Hon. W. O. Perry is Mayor.

Ky., Bellevue.—Ordinance has been prepared providing for the sale on Apr. 6 of \$25,000 4½ per cent. 10-20-year improvement bonds. Address G. Herold, City Atty.

Ky., Calhoun.—\$30,000 6 per cent. 2-10-year McLean County Drainage Dist. bonds, dated Mch. 1, 1916, are being offered; denomination \$100. Address S. P. Robertson, Secy. of District.

Ky., Elizabethtown.—Election is soon to be held in Senora School Dist., Hardin county, to vote on school-improvement bonds. Address Board of School Trustees.

Ky., Greenup.—\$50,000 of an issue of \$200,000 5 per cent. \$1000 denomination Greenup county road and bridge bonds have been purchased at \$2175 and accrued interest by Fields, Richards & Co., Cincinnati, O.

Ky., Hazard.—Question of issuing \$250,000 to \$300,000 Perry county road-improvement bonds is under consideration. E. C. Duff, Jr., is Judge of Fiscal Court Perry County.

Ky., Henderson.—Election is to be held in Henderson county April 20 to vote on \$400,000 road bonds. Address County Commrs.

Ky., Hopkinsville.—Mch. 18 election is to be held in Christian county to vote on \$400,000 road bonds. Address County Commrs.

Ky., Lebanon.—Election will probably be called in Marion county to vote on about \$200,000 road bonds. Address County Commrs.

Ky., Madisonville.—Bids will be received until 6 P. M. Mch. 18 for \$1300 6 per cent. 10-year street and sewer bonds; dated Nov. 1, 1915; denomination \$100. D. W. Gatlin is Mayor and Jesse Weldon, City Clerk.

Ky., Marion.—Election is to be held May 27, in Crittenden county, to vote on \$200,000 road bonds. Address County Commrs.

Ky., Maysville.—Election is to be held in Mason county to vote on \$200,000 road bonds. Address County Commrs.

Ky., Murray.—\$25,000 4½ per cent. 5-15-year Calloway county refunding bonds have been purchased at a premium by Well, Roth & Co., Cincinnati.

Ky., Paintsville.—Question of calling an election to vote on water-works bonds is under consideration. Address The Mayor.

La., Amite.—Election is to be held in Sixth Ward, Tangipahoa Parish, to vote on \$110,000 road bonds. Address Police Jury.

La., Benton.—Bids will be received until April 11 (date changed from April 12) for \$5,000 5 per cent. 1-30-year bonds Road Dist. No. 2, Bossier parish, dated Sept. 1, 1916. J. C. Logan is Pres. Police Jury.

La., DeRidder.—\$41,000 sewer bonds have been purchased by J. R. Sutherland & Co., Kansas City, Mo., at \$1000 premium.

La., Gueydan.—\$234,000 bonds Dist. No. 5, Gueydan Drainage Dist., are voted. Address Board of Dist. Commrs.

La., Lake Providence.—Election is to be held in East Carroll parish to vote on \$250,000 road bonds. Address Police Jury.

La., Mansfield.—Election is soon to be held in De Soto Parish to vote on \$250,000 road bonds. Address Police Jury.

La., Montgomery.—Election will probably be called to vote on \$10,000 school bonds. Address Board of Education.

La., New Iberia.—Bids will be received until noon Mch. 18 for \$90,000 5 per cent. 40-year bonds First Sewerage Dist., City of New Iberia. Address Charles L. Provost, Secy. Board First Sewerage Dist. Further particulars will be found in the advertising columns.

Md., Baltimore.—Bill has been introduced in the Legislature authorizing city to issue not more than \$1,000,000 bonds for extension to underground conduits. James H. Preston is Mayor.

Md., Cambridge.—School Board is considering question of issuing \$75,000 school bonds.

Md., Chestertown.—Bill has been introduced in the Legislature authorizing Kent county to issue school bonds. Address County Commrs.

Md., Crisfield.—Steps are being taken to issue bonds for paving, installing water and sewer systems and improving fire equipment. Address The Mayor.

Md., Cumberland.—Allegany county is authorized to issue \$60,000 bridge bonds. Address County Commrs.

Md., Cumberland.—Bill has been introduced in the Legislature authorizing Allegany county to issue \$22,000 road bonds. Address County Commrs.

Md., Cumberland.—Bill has been introduced in the Legislature authorizing issue of \$100,000 bonds to create sinking fund. Address The Mayor.

Md., Elkton.—Bill has been introduced in the Legislature authorizing issue of \$20,000 sewer bonds. Address The Mayor.

Md., Rising Sun.—Bill has been introduced in the Legislature authorizing issue of \$8000 light-system bonds. Chas. S. Pyle is Mayor.

Md., Rockville.—Bills have been introduced in the Legislature authorizing Commrs. Montgomery county to issue \$25,000 bonds to relocate and improve road from Norbeck, and \$15,000 to improve road from Dametown to Seneca Mill. Address County Commrs.

Miss., Columbus.—\$50,000 5 per cent. high-school building bonds are voted. D. P. Davis is City Treas.

Miss., Coldwater.—Notice is given that city proposes to issue \$15,000 5 per cent. school bonds. S. D. Wooten is Mayor and M. S. Dougherty Clerk.

Miss., Greenwood.—Bill has been introduced in the Legislature providing for an issue of \$900,000 Leflore county road bonds. J. L. Haley is Pres. Bd. County Supvrs.

Miss., Jackson.—Mississippi Levee Board proposes to issue \$1,000,000 5 per cent. 40-year bonds.

Mo., Independence.—\$75,000 high school bonds, voted Feb. 26, are 20-year 5 per cents.; denominations \$100 and \$500; dated April 1, 1916; maturity April 1, 1936. John W. Dar is Secy. Board of Education.

Mo., Marshfield.—March 14 election is to be held to vote on school bonds. Address Board of Education.

Mo., Pleasant Hill.—March 14 election is to be held to vote on \$20,000 high-school bonds. Address Board of Education.

Mo., Webster Groves.—Election to vote on

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COLORADO SPRINGS

\$15,000 fire department and \$17,000 water-works extension bonds will be held Feb. 25. R. L. Wilson is City Clerk.

N. C., High Point.—Election was held Feb. 7 to vote on \$50,000 street bonds. Result not stated. Address The Mayor.

N. C., Huntersville.—Bids will be opened Feb. 20 for \$3500 6 per cent. electric-light bonds. Address C. A. Cochran, Charlotte, N. C. Further particulars will be found in the advertising columns.

N. C., Nashville.—Bids will be opened Feb. 16 for \$15,000 5½ per cent. 3-30-year \$500 denomination light, water and sewerage bonds, dated Apr. 1, 1916. L. T. Vaughan is Clerk. (Previously noted.)

N. C., Pittsboro.—Election is to be held in Chatham county Apr. 12 to vote on \$50,000 road bonds. Address Jas. L. Griffin.

N. C., Sanford.—\$20,000 5 per cent. 20-year bonds Sanford Graded School Dist. have been purchased by Sidney Spitzer & Son at \$50 premium and accrued interest.

N. C., Zebulon.—Election is to be held to vote on \$10,000 electric-light bonds. Address The Mayor.

Okla., Chickasha.—The report that \$10,000 school bonds would be sold on Mar. 1 was erroneous. Wm. F. E. Ramsey is Secy. Bd. of Education.

Okla., Choctaw.—\$15,000 5½ per cent. \$500 denomination bonds Oklahoma County Consolidated School Dist. 2 have been sold at par. Address Eugene Q. Couch.

Okla., Cleveland.—Election is to be held Feb. 15 to vote on \$100,000 water-works bonds. Address City Clerk.

Okla., Commerce.—Election is to be called to vote on \$10,000 bonds School District No. 18. Address Board of Education.

Okla., Muskogee.—Election was held Feb. 7 to vote on \$80,000 5 per cent. 20-year park bonds. The bonds have already been sold to A. J. McMahan, Oklahoma City, at \$1200 premium and accrued interest. Franklin Miller is Mayor and Chas. Wheeler, Jr., City Clerk.

Okla., Oklahoma City.—Election will probably be held to vote on \$1,500,000 water-works extension bonds. Address The Mayor.

Okla., Oilton.—\$25,000 water-works and \$10,000 sewer bonds are voted. Roy McFarland, City Clk., Box 115, Oilton. (Previously noted.)

Okla., Pauls Valley.—City Council has authorized issue of \$16,000 water-works-improvement bonds. T. L. Kendall is Mayor.

Okla., Ponca City.—Election is to be held April 4 to vote on \$15,000 auditorium construction bonds. Address The Mayor.

Okla., Perry.—Question of issuing water-works bonds is under consideration. Address The Mayor.

Okla., Ringling.—\$50,000 6 per cent. 5-25-year water-works bonds dated Apr. 1, 1916, have been purchased at par and accrued interest by C. Edgar Hinnold, Oklahoma City. Frank Ketch is Mayor.

Okla., Stratford.—\$35,000 water and light bonds are voted. Address The Mayor.

Okla., Stroud.—Bonds for water-works will probably be issued. Address The Mayor.

S. C., Bishopville.—Election is to be held Feb. 17 to vote on \$8000 bonds Cypress Consolidated School Dist. No. 16, Lee county; Walter W. Bell, E. H. Heaton and S. A. Jeffords, Trustees of District.

Tenn., Ashland City.—Election is to be held in Cheatham county Feb. 21 to vote on \$150,000 Cheatham county road bonds. S. L. Harper is Clerk County Court.

Tenn., Centerville.—\$200,000 Hickman county road bonds defeated. Address County Commrs.

Tenn., Erwin.—Bids are being received for \$10,000 6 per cent. Union county high-school warrants, dated Feb. 1, 1916, and maturing \$2500 Feb. 1, 1917, and \$2500 each succeeding year. R. M. Barry is County Chrm.

Tenn., Madisonville.—\$325,000 Monroe county road bonds are voted. Address County Commrs.

Tenn., Paris.—\$65,000 Henry county time warrants issued to pay off old debts have been purchased at par, accrued interest, plus premium of \$2375, by Paul Petty, Spartanburg, S. C.

Tenn., Winchester.—\$350,000 5 per cent. 40-year Franklin county road bonds have been sold to Keane, Higbie & Co., Detroit, at \$42,760 premium.

Tex., Amarillo.—\$40,000 paving and \$10,000 sewer 4½ per cent. 1-10-year \$1000 denomination paving and sewer bonds have been purchased at par and accrued interest by Hancock Bond Co., Chicago.

Tex., Austin.—The Attorney-General has approved the following securities: \$50,000

bridge, \$34,000 paving and \$36,000 water-works 5 per cent. bonds, Houston; \$17,000 5 per cent. 5-40-year Port Lavaca street-improvement bonds; \$2300 5 per cent. 10-20-year Van Zandt County Common School Dist. No. 93 schoolhouse bonds; \$600 Dist. No. 44 and \$600 Dist. No. 59, Nacogdoches county, 5 per cent. 5-20-year schoolhouse bonds; \$50,000 5 per cent. 10-50-year Paris street-improvement bonds; \$10,000 5 per cent. 10-40-year Venus sewer bonds; \$6200 5 per cent. 10-40-year bonds Floyd county common school district No. 11 schoolhouse bonds; \$1100 5 per cent. 2-20-year bonds Shelby county common school district No. 76.

Tex., Beaumont.—\$190,000 5 per cent. 20-40-year \$1000 denomination Jefferson county road bonds have been purchased by Field, Richards & Co. and Seasongood & Mayer, Cincinnati.

Tex., Dallas.—April 4 city will vote on \$500,000 light, \$300,000 sewer and \$250,000 park bonds, Manning B. Shannon is City Finance Commr. (Previously noted.)

Tex., El Paso.—\$15,000 5 per cent. 40-year \$1000 denomination bonds Smelter Common School Dist. No. 3, El Paso county, will be offered for sale within the next few weeks. \$5000 bonds Vinton Common School Dist. are now on sale. \$3000 bonds Island Common School Dist. are voted. Elections will be held in Mar. to vote on \$6000 bonds Fort Hancock Common School Dist.; \$6000 bonds San Elizario Common School Dist. and \$15,000 bonds Socorro Common School Dist., all in El Paso county. Miss Myra C. Winkler is County School Supt.

Tex., Lufkin.—\$200,000 5 per cent. 20-40-year Dist. No. 5, Angelina county, road bonds defeated.

Tex., Jacksonville.—\$10,000 6 per cent. 1-10-year funding warrants, dated Feb. 21, 1916, have been purchased by J. L. Arlitt, Austin, Tex.

Tex., Madisonville.—\$200,000 6 per cent. 20-year Madison county road and bridge bonds defeated.

Tex., Mount Pleasant.—On Feb. 20 the following securities will be offered for sale: \$200,000 Road Dist. No. 1 and \$25,000 Road Dist. No. 3, Titus county, 5 per cent. 20-40-year bonds. In denomination of \$1000 and \$500, respectively. Sam Porter is County Judge.

Tex., Royce City.—Election is to be held April 1 to vote on \$20,000 bonds Royce Independent School Dist. Address Bd. of Education.

Tex., San Angelo.—Steps are being taken to issue bonds for school in Lake View School Dist., Tom Green county. Address County Commrs.

Tex., Sweetwater.—Petition is being circulated asking that an election be held in Blackwell precinct, Nolan county, to vote on \$20,000 road-building warrants. Address County Commrs.

Tex., Victoria.—\$35,000 Road Dist. No. 6, Victoria county, bonds defeated.

Tex., Wichita Falls.—\$225,000 5 per cent. 10-40-year \$1000 denomination Wichita county courthouse bonds have been purchased by E. L. Twing & Co., San Antonio, at \$564.50 premium and accrued interest.

Va., Clarendon.—Election will probably be held in Alexandria county to vote on school and road bonds. Address Board of Suprvs.

Va., Eastville.—Date for opening bids for \$20,000 30-year \$100 or \$500 denomination road bonds Capeville Magisterial Dist., Northampton county, not yet decided. Address Board of Supervisors.

Va., Portsmouth.—Western Branch Magisterial Dist. No. 1, Norfolk county, is authorized to issue \$15,000 school-improvement bonds. Address Board of Education.

Va., Richmond.—Bonds amounting to \$3,608,361.44 for improvement of bridges, streets, sewers, etc., will probably be issued; also about \$200,000 for schools. Later report states that Council Finance Committee has voted to reduce amount of bond issue to \$2,000,000. Address Board of Finance Committee.

W. Va., Beckley.—\$835,000 Raleigh county road bonds have been voted as follows: Town Dist., \$300,000; Trap Hill Dist., \$185,000; Shady Spring Dist., \$190,000; Slab Fork Dist., \$210,000. Address County Commrs.

W. Va., Charleston.—Election is to be held in Kanawha county to vote on road and bridge bonds. Address O. B. Babbitt, Charleston.

W. Va., Fairmont.—\$360,000 Paw Paw Dist., Marion county, road-improvement bonds will be voted on Feb. 21. A. G. Martin is County Clerk. (Previously noted.)

W. Va., Lewisburg.—Election is to be held Feb. 21 to vote on \$80,000 5 per cent. 10-34-

year Fort Spring Dist., Greenbrier county, school bonds. J. W. DeVeber is Prest. and L. E. Kramer Secy. Board of Education of Fort Spring Dist.

W. Va., Moundsville.—Bids will be received until 10 A. M. Feb. 20 for \$150,000 5 per cent. Union Dist. road bonds, dated Jan. 1, 1913, and maturing 1943 to 1947, inclusive. J. E. Chase is Clerk County Court Marshall County.

W. Va., Ranson.—Bids will be received until noon Feb. 21 for \$5000 10-34-year \$500 denomination municipal building and street-improvement bonds, dated Jan. 1, 1916. Bonds are part of an issue of \$10,000 voted Jan. 8, 1916. Address Chas. H. Smith, Recorder.

W. Va., Ronceverte.—Election is to be held Feb. 21 to vote on \$30,000 high-school bonds. Address Board of Education.

FINANCIAL NOTES

The National Bank of Athens, Athens, Ga., recently celebrated the 50th anniversary of its founding. It began business Feb. 20, 1866.

The Tennessee Bankers' Association will hold its annual convention May 16 and 17 at Knoxville. F. M. Mayfield of Nashville is Secy.

The Florida Bankers' Association will hold its 23d annual convention on April 7 and 8 at Daytona. G. R. DeSaussure of Jacksonville is Secy. and Treas.

The American Bankers' Association will hold its annual convention this year at Kansas City, Sept. 25 to 30, inclusive. Fredk. E. Farnsworth of New York is Gen. Secy.

A meeting of the board of governors of the Investment Bankers' Association of America is to be held in Baltimore Feb. 17 to discuss and consider the situation concerning investment securities.

The Sinking Fund Commission of the State of South Carolina gives notice to the holders of the 4½ per cent. redemption of Brown consol bonds and stocks of the State that it has decided to call in and pay on Apr. 1,

RAILROAD CONSTRUCTION

Railways.

(Continued from Page 71.)

provements, including equipment. E. A. Hadley, St. Louis, Mo., is Ch. Engr.

Fla., Miami.—Savings Investment Co. of Florida gives notice of application for incorporation and in addition to dealing in real estate and personal property, and engaging in mining and other businesses, may build railroads; capital \$1000. Office, 511 Burdine Bldg., Miami, where organization is to be effected at 10 A. M. Feb. 21. Incorporators: R. M. Haviland, Prest.; James M. Carson, V.-P., and Geo. Holmer, Secy. and Treas., all of Miami.

Ky., Barbourville.—T. J. Anderson of Knoxville, Tenn., is reported given a contract to grade 8 mi. of the Cumberland & Manchester Railroad, beginning at Cannon, Ky. M. E. S. Posey, Barbourville, is Ch. Engr.

Ky., Uniontown.—Uniontown Southern R. R. Co., capital stock \$150,000, is incorporated with headquarters at Morganfield, Ky., and proposes to build a line from Uniontown via Morganfield, Sturgis and Paducah, Ky., to Memphis, Tenn., about 225 mi. Stockholders, S. B. Anderson and Walter B. McLean of Memphis, R. J. Nelson of Cincinnati and G. L. Drury of Morganfield.

Miss., Greenwood.—John H. Parson, Prest. Southern Finance & Construction Co. of Memphis, Tenn., is reported contemplating construction of an interurban railway to connect Schlater, Itta Bena, Greenwood and Black Hawk, Miss., by a line 35 or 40 mi. long.

N. C., Greensboro.—Construction is to begin immediately on the proposed Greensboro Northern & Atlantic Ry., of which T. O. Troy is Prest. Grading is to start at Durham, N. C., and continue via Chapel Hill, Swepsonville, Graham and Burlington to Greensboro. M. W. Thompson of Greensboro is Secy.

N. C., Shelby.—Incorporators of the Shelby Northern Railway Co., which is to build 21 mi. from Shelby via Fallston, Beam's Mill and Belwood to Casar, N. C., are O. M. Mull of Shelby; W. N. Dodd of Greenville, S. C.;

1916, at the face amount thereof, with accrued interest, the entire issue of these securities. After that date interest will cease. S. T. Carter is State Treasurer at Columbia, S. C. Further particulars will be found in the advertising columns.

Book Reviews.

Journal of the National Institute of Social Sciences. No. 1, Vol. 1. Little Hamilton French, editor. Published by The Alexander Press, 114-6 West 27th St., New York. Clothbound. 242 pp.

This, the first issue of the organ of the body the name of which it bears is published in recognition of those who conspicuously render services to humanity and to bring into organized fellowship all who honor this ideal of devotion to the public welfare, in quiet or in public ways, in all parts of the country; to create a body whose opinion shall have weight and influence in forming public opinion; to give those who are working in remote places, in an alien atmosphere, a sustaining sense of companionship; to keep the widely-scattered members of the Institute in touch with one another by reporting the activities of the nation and recording its progress in civilization, and by printing significant papers or discussions by its members.

The list of contributors includes a number of the most eminent scholars, publicists and statesmen of today, and the articles cover a wide range of topics, from art to rural credits.

There are also reports of activities of members in Arts and the Dramas, Science, Measures Relating to Public Health, Philanthropic Movements, Our Colleges and Schools, Public Measures, and last, personal items.

Gerald A. Ryder, W. E. Soden and J. A. Vandergrift & Co. of New York and W. C. Cullen of Newark, N. J. Total authorized capital stock \$300,000.

Okla., Lakemp.—Plans to build the proposed Lakemp & Northwestern R. R. from the Santa Fe line in Ellis county west to Guymon and thence to Boise City, 125 mi., are reported well advanced, much right of way being secured. Kollman Bros. of Lakemp may give information.

S. C., Greenwood.—Concerning report that survey might be made soon for a railroad from Greenwood to Augusta, Ga., H. L. Watson, Secy. Chamber of Commerce, says that no work has yet been done.

Tex., Amarillo.—W. L. Carville of Dallas, at the request of the railroad committee of the Amarillo City Board of Development, will, it is reported, make an investigation of the proposed railroad route from Amarillo northward to the Oklahoma boundary, about 85 mi.

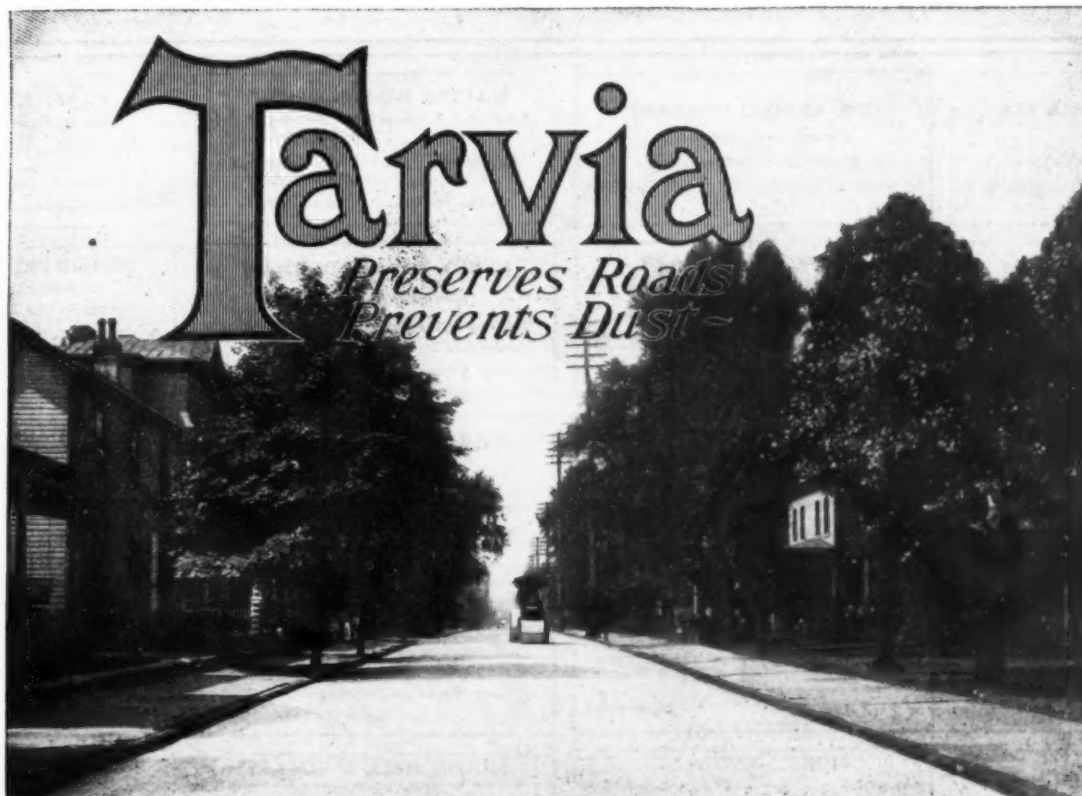
Tex., Henrietta.—The Southwestern Ry. contemplates an extension 50 to 75 mi. long northeast into Oklahoma and desires to get in touch with financing and contracting corporations. Location of line practically decided. A. C. Parks is V.-P. and Gen. Mgr. at Henrietta.

Tex., Houston.—C. W. Gasaway, Ch. Engr., is reported to have begun survey for proposed Houston, Richmond & San Antonio Electric Traction Co. between Gonzales and San Antonio. C. C. Godman of Kansas City is elected Prest. and Ed Kennedy of Houston V.-P. R. M. Walmsley is also reported interested.

Va., Williamsburg.—Chesapeake & Ohio Ry. is considering proposition to build a spur about 3 mi. long toward Yorktown, but nothing definite is yet decided. F. I. Cabell, Richmond, Va., is Ch. Engr.

STREET RAILWAYS

Ark., Little Rock.—Argenta Terminal Co., capital \$12,000, is incorporated to build a belt line 2½ mi. long in Argenta and will complete the line started by the Little Rock & Argenta Ry. Co. Incorporators: A. C. Butlerworth, C. C. Kavanaugh, C. R. Ledbetter, A. C. Read and C. G. Price.



East Depot Street, Latrobe, Pa., Tarvia-mixed-macadam over brick pavement.

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The old brick pavement on East Depot Street, one of the best residential streets in Latrobe, Pa., was badly worn and full of uneven places.

The authorities felt the need of improving the street, which is on the main trunk line for automobiles between Philadelphia and Pittsburgh, but decided that instead of going to the great expense of repaving with brick they would have it resurfaced with a hot "Tarvia-X" and crushed stone mixture. As a foundation the brick still had possibilities.

The surface of the pavement was thoroughly cleaned and the depressions filled with the hot mixture, which was compacted by rolling, after which the pavement was ready to receive a two and one-half (2½) inch course of the Tarvia-mixed-macadam surfacing. After the mixture was uniformly spread it was covered with a light course of clean stone chips and rolled to a finished depth of two (2) inches.

A seal coat of Tarvia was then spread over the entire surface and covered with stone chips, followed by the final rolling. The street was closed for several days while the mixture was in process of setting, after which traffic was admitted.

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INDUSTRIAL NEWS OF INTEREST

New Plant Site.

The Ohio Tractor Co., Marion, O., having sold its present plant and acquired a site for a new one in the south part of Marion, will increase its output when established in the new quarters.

New Sales Manager.

H. F. Wardwell has been appointed General Sales Manager of the Fenestra Division of the Detroit Steel Products Co., Detroit, Mich., succeeding P. A. Smith. Mr. Wardwell has been with the company for some time in various capacities and is thoroughly acquainted with the line and sales plan of the organization.

Tin Plate Company Prosperous.

The Southern Sheet & Tin Plate Co., Ashland, Ky., has just closed a prosperous year, and orders in hand speak well for the coming season. The company specializes in roofing sheets and metal shingles and its progress has been made along peaceful lines. War orders have not thus far been accepted, although the plant is equipped for certain kinds of work in that direction.

Partnership Dissolved.

The steamfitting, plumbing, heating and ventilating business heretofore conducted by W. P. Longworth and R. Carter Beverley under the firm name of W. P. Longworth & Co., 9 N. 7th St., Richmond, Va., has been dissolved. Mr. Beverley has taken over the business and obligations of the company and will continue the business under the name of R. C. Beverley Heating Co., Inc., at the same address.

Change of Name.

Owing to the confusion that has occurred over its name, the Southern Fireproofing Supply Co., Inc., Washington, D. C., has changed to the Southern Building Supply Co., Inc. This is not a contracting concern in any manner, and does not compete with its customers, as the former name seemed to imply. At the same time the change of name was authorized the capital stock was increased to \$30,000, fully paid in.

New Hospital Publication.

Hospital Management is the name of a new paper published at Louisville, Ky., by The Crain Publishing Co., Inc., 1405 Starks Bldg. A prominent feature is a department for industrial hospitals, the idea of this branch being to record developments in the

rapidly-growing field of welfare work. The leading article in Hospital Management for February describes the hospital of the Youngstown, O., Sheet & Tube Co., which was recently opened with Dr. Sidney McCurdy in charge.

The Osgood Company Increases Capacity.

In order to take care of its rapidly increasing business, The Osgood Company, Marion, O., manufacturer of steam shovels and dredges, has purchased the plant of the Ohio Tractor Co., also of Marion, which will enable the doubling of the Osgood Company's capacity. The larger machine tools, for which crane service is desirable, will be moved to the main division of the newly purchased plant, while the smaller tools and the foundry will be operated at the present location.

Seating and Fixture Contracts.

Among the recent contracts of the Southern Seating & Cabinet Co., Jackson, Tenn., the following are of interest: Installation of banking fixtures for the Farmers' Nat. Bank of Hartford, N. C.; bronze and mahogany fixtures for the Taylor (Tex.) Nat. Bank; seating for the new terminal station at Dallas, Tex. The company is now constructing fixtures for the Bank of Plant City, Fla., composed of imported marble and red gum principally, and has just completed the installation of settees for the Trans-Mississippi Terminal Station at New Orleans.

The Alexander Milburn Company Annual Meeting.

At the annual meeting of the stockholders of The Alexander Milburn Co., manufacturer of acetylene gas apparatus, 1430-6 W. Baltimore St., Baltimore, held recently, directors were elected as follows: A. F. Jenkins, S. H. Walker, A. Brylawski, A. W. King, C. E. Pollard. The officers for the ensuing year are: A. F. Jenkins, Pres.; A. Brylawski, V.-P.; S. H. Walker, Treas.; A. W. King, Secy. The company reported a favorable year and a steady growth of its business with government departments, where several large plants have been placed in navy-yards, and also in the metal-working field, where a large proportion of its plants are installed.

Complete Supervision by Mining Engineers.

Maynard & Simmons, mining, geological and civil engineers, Atlanta, Ga., have completed the design of the new washing and refining plant of the Savannah Kaolin Co. at Gordon, Ga. Construction is under way and machinery is being purchased for the completion of the plant in about 60 days. This kaolin property was located by the engineers named, and all factors relative to the commercial development of the property were investigated by them in conjunction with Arthur S. Watts, U. S. Bureau of Mines. A unique feature of this plant will be the bleaching of the kaolin chemically to fit it for use in manufacturing the highest grade of white chinaware, looking to the establishment of manufacturing of such a product in the Macon (Ga.) district, in which this deposit is located.

Mining Machine Installations.

Following is a list of the recent installations of ore-washing and screening machinery for iron ore, barytes, ochre, zinc ore, etc., made by the Davis Foundry & Machine Works, Rome, Ga.: 1 complete double-log ore washer outfit with screen, picking belt for washing and screening barytes ore for the Cartersville, Ga., mill of Krebs Pigment & Chemical Co., Newport, Del.; washer outfit for barytes ore for Big Tom Barytes Co., Emerson, Ga.; double-log ore washing outfit for ochre for the New Riverside Ochre Co., Cartersville, Ga.; double-log ochre washer and barytes washer for the Georgia-Peruvian Ochre Co. for its mine at Cartersville; complete 4-log washer outfit for washing and screening iron ore for Sugar Valley Land Co., Oshkosh, Ind., for its Sugar Valley, Ga., mines; washer outfit for the Durex Chemical Co., New York, for washing barytes ore at the mines at Sweetwater, Tenn. The company is now building a complete washer outfit.

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fit for the International Ry. of Central America for washing zinc ore at the Alotepaque mines, Zacapa, Guatemala. The heavy parts of this machinery will have to be made in sections in order that it may be transported on mule back over the mountain passes to the mines.

Fuel Oil Appliances.

A. M. Lockett & Co., Ltd., Houston, Tex., and New Orleans, La., contractors for furnishing and installing complete equipment for all sorts of oil-burning installations and advisors and estimators on special oil-burning problems, have issued a booklet describing the process of fuel-oil combustion and its commercial application, and burners, valves, pumps, boilers, etc., for its use. Following a thorough treatment of these subjects are tables of sizes and capacities; relation between specific gravity and weight per gallon of oils and other liquids lighter than water; proximate analyses and heating values of American coals; table of tests of Babcock & Wilcox water-tube boilers; condensed table showing the properties of steam; factors of evaporation; diameters, areas and circumferences of circles; boiler efficiencies—oil fuel; sizes of chimneys, with appropriate horsepower boilers; chimneys for oil fuel.

New Engineering Consolidation.

The engineering firm of Ballew, Wehr & Walden, consulting and constructing engineers, has been located in Baltimore at No. 10 West Fayette street, and 5123 Sheridan drive, Chicago. Mr. C. H. Ballew, a consulting engineer and manufacturing specialist, has been located in Chicago for the past 15 years and has designed, built and equipped a number of large modern plants in the Middle West and South. Mr. Albert H. Wehr of Baltimore is president of the Baltimore County Water and Electric Co., president of the Central Metal and Supply Co. and the Assau Canning Co. and is connected with other companies. Mr. A. E. Walden has been a resident of Baltimore for 10 years, during which time he has been chief engineer for the Baltimore County Water and Electric Co. for six years. He is an associate member of a number of engineering

societies, among which are the American Institute of Electrical Engineers, the National Electric Light Association, the American Street Railway Association and a member of the New England Water-works Association. Mr. Ballew will continue his headquarters in Chicago, devoting his time principally to the development of manufacturing plants and problems, and the Baltimore office will be in charge of Messrs. Wehr & Walden, specializing in water-works, filtration, electric power, light and street railroad engineering.

Chattanooga Iron Contracts.

Within the last 30 days several good orders for ornamental iron have been closed by the Chattanooga Roofing and Foundry Co., manufacturers, Chattanooga, Tenn. Among them are: Ornamental iron stairways and elevator enclosures for Steedley Hospital building, Spartanburg, S. C.; L. D. Proffitt, Archt., Spartanburg; castings, stairways and structural steel for the Durham Water-Works Improvements, Gilbert C. White, Engr., Durham; all ornamental ironwork, including stairways, wirework and structural steel, for receiving building and nurses' home of the Central Hospital, Raleigh, N. C.; F. K. Thompson, Archt., Raleigh; stairways and ornamental ironwork for the Pontotoc County Courthouse, Pontotoc, Miss.; N. W. Overstreet, Jacksonville, Miss.; and Mahan & Broadwell, Memphis, Tenn.; Archts; ornamental iron and stairways for Gilmer Bros., office building, Winston-Salem, N. C.; Humphreys, Faw & Knapp, Archts., Winston-Salem; 19 spiral stairways for the municipal grain elevator, New Orleans, La.; Ford, Bacon & Davis, Engrs., New Orleans; ornamental ironwork, including stairways, wirework, metal windows and structural steel, for the Craven County Courthouse, Newbern, N. C.; Robt. F. Smallwood, Archt., Newbern; ornamental iron and structural steel for the Federated Woman's Club building, Raleigh, N. C.; Robt. F. Smallwood, Archt., Newbern.

Profit Sharing and Pensions.

A share of its profits will be distributed by the General Asphalt Co. and its subsidiaries, Philadelphia, to the officers and

employees receiving salaries of \$60 a month or more, who shall have been continuously in the employ of the company for one year prior to the fiscal year ending January 31, 1917. Distribution will be based on 1 per cent. of the salary of each employee for each \$100,000 of net gain to surplus in the fiscal year ending January 31, 1917, over and above the amount required for the annual 5 per cent. dividend payments of the preferred stock of the company. Among the subsidiaries are numbered: The Barber Asphalt Paving Co., principal operating company in the United States; the New Trinidad Lake Asphalt Co., Ltd., and the New York & Bermuda Co., the chief supply companies; the Utah Railway Co., which was built to enable the company to market its gilsonite deposits in Utah; the Trinidad Lake Petroleum Co., Ltd., owning and operating extensive oil fields on the island of Trinidad. These companies will also make provision for their employees after retirement by pensions to those who reach 60 years of age and have completed 25 years of service with the company. This will cover the case of deserving employees who are disabled after 20 years of service, not having reached the age limit. The annual pension will be at the rate of 1 per cent. of average salary during the ten years preceding retirement for each year's service. The profit sharing and pension plan is in line with the increasing welfare work of large employers throughout the country.

TRADE LITERATURE

Light Motor Truck.

Old Hickory motor trucks, 1250 pounds capacity, are made by the Kentucky Wagon Manufacturing Co., Louisville, Ky., manufacturers of the well-known Old Hickory wagons, for all kinds of light and comparatively rapid hauling. They are described in a recent circular that gives brief specifications, the uses of Old Hickory trucks and illustrates them.

Steel Forms for Heavy Concrete.

Building the world's highest concrete water tower tank at Middleboro, Mass., with Blaw steel forms is described in Bulletin 65 from the Blaw Steel Construction Co., Pittsburgh, Pa. The Blaw form on other heavy concrete jobs, such as large sewer, aqueduct, railroad tunnel and large cotton mill work, is shown. A separate leaflet amplifies the same subject.

Pipe Bender.

Wonder pipe benders are claimed in a leaflet issued by the manufacturer, the Wonder Pipe Bending Machine Co., 36 Bromfield St., Boston, Mass., to enable the bending of pipe from 1/2 to 2 inches in size to any angle to 90 degrees in 30 seconds without injury to the pipe and resulting in a smooth interior that by eliminating elbows lessens friction of material passing through it, and so effects a power economy. A list of some of the



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ATLANTIC COAST LINE

The Standard Railroad of the South

NEW YORK, Broadway and 29th St.
BOSTON, 248 Washington St.
PHILADELPHIA, 1019 Chestnut St.
BALTIMORE, Light and German Sts.
WASHINGTON, 1406 New York Av., N. W.



users includes the names of very prominent companies.

Iron Silos.

Duro pure iron silos, manufactured by the C. C. Fouts Company, Middletown, O., are described in detail in a recently issued catalogue. The claims are made that iron of the highest quality is used, that the design is correct and that the result is a long-lived, satisfactory silo, fire, weather and practically rust-proof. Views are given showing Duro silos on farms and letters of commendation from the users.

Hammer Drills.

Sullivan air, water and steam rotator hammer drills for drilling in stone and ore of all kinds, and auger rotator drills for use in soft ground, are illustrated and described in a recent bulletin from the manufacturer, the Sullivan Machinery Co., Chicago, Ill. Views are given of the drills in actual mining, quarrying and excavating work. Cross sectional drawings supplement the text in explaining mechanical details of the devices.

Patents That Protect.

The above is the copyrighted slogan of R. S. & A. B. Lacey, patent attorneys, Washington, D. C., and is the gist of several elaborate publications by them in which are shown illustrations of many devices familiar to everybody, the patents for which have been obtained by this firm. Visible results is what the various pamphlets undertake to show as having been got for many inventors of now well-known and largely used devices, appliances and machinery.

Steel Rails.

A greater activity than at any previous time for several years is reported by the West Virginia Rail Co., Huntington, W. Va. The company is rolling rails of all sizes within its range from 8 to 45 pounds, and has been especially successful in meeting the needs of coal and lumber companies. A catalogue recently issued contains sectional illustrations of various sizes of rails, with specifications of splice and angle bars and punchings and tables to assist the purchasing agent.

Alabama Mineral Production Statistics.

The report of the Geological Survey of Alabama, Eugene Allen Smith, State Geologist, contains statistics of the mineral production of Alabama for 1914, collected in co-operation with the United States Geological Survey and adopted from advance chapters of the Mineral Resources of the United States. The tables show a decrease in the value of all the mineral products of Alabama in 1915 except cement, gold and silver, graphite and stone, only, however, while a corresponding decrease took place for the whole of the United States. These figures were obtained before the results of the present resumption of activities could be recorded.

Pipe Unions and Fittings.

The Whole Kewanee Family is the title given to a booklet just issued by the National Tube Co., Pittsburgh, Pa., manufacturer of Kewanee products. It contains complete lists of the Kewanee specialties, instances of satisfactory use of Kewanee products, memoranda showing various types of literature issued by the company descriptive of its different products. The Kewanee union is called by the manufacturer the father of the family of the Kewanee specialties, each claimed to be equally useful in its particular sphere. Besides the outstanding feature of brass threads to iron threads to prevent rusting, other features are the absence of inserted parts and the compressed-air test under water given each separate union.

Skidding Logs.

Lidgerwood portable high spar skidders for overhead log skidding, manufactured by the Lidgerwood Mfg. Co., 96 Liberty street, New York City, are described and illustrated in actual working conditions in bulletin No. 55, recently issued by the manufacturer. This machine is claimed to be of especial value to the lumberman in getting the logs to the mill at the lowest cost by always enabling overhead skidding independently of the location of a suitable tree spar, as the high, mounted steel spar performs this function in a superior manner and allows the spar to be located where the railroad can be run to the best advantage instead of forcing the railroad to run to a suitable tree spar, an advantage felt particularly in rough mountain or swampy land. Copies will be mailed readers of the Manufacturers Record on application.

Talking Points About the South.

With the desire to present some concrete facts about the South so as to show the vast resources and opportunities in this most prosperous section, the Southern Railway has issued a booklet under the title given above. Its topics are: Cotton crops and mills, the production of pig-iron, steel and coal and the proportion in the South, the naval stores industry, lumber cutting and milling, proportion of national apple production of the South, water-powers and hydro-electric development, peach crop, general agriculture, livestock, the attractiveness of Southern farm lands and their relatively low price, bank deposits, general information of the various agricultural, commercial and industrial interests, tourist travel and a conclusion on how to go. Copies will be supplied on application to any Southern Railway representative.

Discovery and Present Position of Petroleum.

The vastness of the petroleum industry and its vital relation to material progress are graphically presented in two booklets, "The Origin of Petroleum" and "Eighty-five Per Cent. Success," recently issued by the Cunningham-Graham Company, bankers, oil and gas properties, 30 State St., Boston. A third booklet, "Commercial Discovery of Petroleum," deals with the activities of Edwin L. Drake, who successfully bored for oil in Pennsylvania in 1859. Today petroleum in some form is used as lubricant or fuel in every kind of machine and power transportation. The various ramifications of this tremendous industry extend so into practically every branch of productive activity that its ultimate bearing on human achievements is hard to grasp immediately. The importance of petroleum is constantly growing with its further application to mechanical needs. It is with a view to financing safe developments in the great oil fields of Oklahoma that these educational booklets have been issued by the banking firm named. Copies will be sent on application.

Tungsten.

The scarcity of tungsten and its constantly increasing uses for tool steel, armor plate, electrical goods, etc., make of especial interest a highly informative booklet on the properties and uses of tungsten recently written by Charles L. Young, 6 Wall St., New York City. To the average reader the work will prove a revelation of this metal that is rapidly increasing in distinction in the metallurgical world. As of many other articles, there has been a shortage of tungsten in this country caused by the closing of foreign markets by the European war. This brings into greater prominence the fields of production in the United States, lying principally in Colorado and California. The Boulder field, in the former State, is an important producer. Outside of this, California produces the purest and richest ores in the largest quantities in this country, according to this authority. The present high price of tungsten makes its mining highly profitable. The price per short ton of concentrates containing 60 per cent. of tungsten trioxide has risen from \$840 in 1907 to \$3000, and the likelihood is thought to be that the price will never be nearly as low as previously, when the uses of the metal and its products were a very small part of the present uses, while the metal is still in its infancy of development.

Coal Handling and Storing.

In the face of the danger of a strike of coal miners, any means of insuring a coal supply adequate to tiding over operation during the period of non-supply is of particular value. The topic is dealt with by Henry J. Edsall of the engineering staff of the Link-Belt Co., Philadelphia, on the ground that the storage of coal is insurance against either excessive fuel prices or a shutdown. Certain precautions must be observed in stocking bituminous coal, and the means to be employed will vary widely with circumstances, each installation being a separate problem, the paper maintains. Many varieties of stocking and reclaiming apparatus are described therein. The particular matter of handling between wagon or truck and yard or storage pile is treated in a separate booklet on the Link-Belt wagon and truck loaders for handling coal, coke, stone, sand and similar loose material. These are portably mounted endless chain elevators with different capacities and feeder and chute arrangements. Illustrations show them in widely differing operations. Line drawings with descriptive text explain the mechanical features. Another booklet from the same company deals with a wider range of apparatus for the handling, preparation,

storing of stone, gravel, sand, etc.; equipment manufactured by this company made necessary by the demand for crushed stone, washed sand and gravel, clean sized slag and other carefully prepared products of an abrasive nature.

Industrial Lights.

Good light as an essential to efficient night work and the Milburn acetylene gas lamp as a superior light for this purpose, with illustrations of the lamp in various sizes and models and as it appears on the job, are contained in a recent catalogue from the manufacturer, The Alexander Milburn Co., 1420-6 W. Baltimore St., Baltimore. Besides the lamp this company manufactures all kinds of gas-cutting and welding apparatus.

Illumination Guide.

The sixth edition of How to Figure Illumination, a booklet from the Western Electric Co., Chicago, is ready for distribution. It lists complete tables and full illuminating data, as well as illustrating and describing all the sizes and styles of Sunbeam Mazda lamps. The information contained therein, together with curves and illustrative matter is designed to be sufficiently complete to enable the laying out of any illuminating plan. Copies will be sent on request.

Fuel of City Waste.

Value of City Waste is the name of a book published by the Co-coal-Co., 901 Gloyd Bldg., Kansas City, Mo., treating on the subject of sanitation, incineration, reduction, gathering, and commercial value of sewage, garbage, debris from streets, trash, rubbish, kindling, dead animals, trade waste, fill. It

contains a discussion on converting the materials into antiseptic fuel rather than destroying them unused at as great cost as that of the conversion into fuel. The Oshkosh process, controlled by this company consists of reducing the material to nearly a pulp by treatments including the entrance of steam and subjection of the material to intense heat, after which coal dust and tar are added. It is then molded into the briquettes and dried hard, becoming a fuel easily handled and stored.

New Auto for Kentucky—The Dixie Flyer.

Simplicity, distinction, luxury, power, speed, are characteristics said to be embodied in the Dixie Flyer, a new motor car put on the market by the Dixie Motor Co., Inc., Louisville, Ky. Some of the specifications, in condensed form, are: Motor, Dixie-Lycoming, unit-power plant, 30 H. P., three-point suspension, four cylinder, 34 inches, cast endloc with removable water-cooler head, valves enclosed, noiseless; lubrication, constant circulating splash system, plunger pump; cone type clutch; three-speed selective-gear type transmission; master control; drive, through one universal joint and propeller shaft; springs, self-lubricating, front semi-elliptic, rear three-quarter scroll elliptic; wheel base, 112 inches. The car sells for \$775, f. o. b. Louisville, complete equipment, including electric generator and starter, lights, horn, one-man top with hood, windshield, speedometer, one extra mountable rim and tire carrier, license brackets and complete tool equipment. The manufacturer is now closing territory allotments.

Advertisements Received Too Late For Classification

Trustee's Sale

In pursuance of an order of sale made and entered by Hon. Chas. Batsell, Referee in Bankruptcy, at Sherman, Texas, I will offer for sale to the highest and best bidder for cash the physical properties of the entire plant of the Sherman Cotton Oil Provision Company at 2 o'clock P. M. on Tuesday, April 4, 1916, at its said plant on the corner of Willow and Mulberry Sts., in Sherman, Texas. This plant consists of the following: One modern cottonseed-oil refinery, equipped with necessary buildings, tanks and machinery for refining and finishing 1000 barrels crude oil per day; one brick deodorizing plant, equipped with all necessary tanks and machinery for deodorizing 300 barrels oil per day. One acidulating plant, daily capacity 50,000 pounds soap stock, together with all necessary tanks and equipment. One boiler-room, two Heine boilers, total rating 348 horsepower. Foster superheater and other necessary equipment. One wooden office building completely equipped with desks, chairs, etc.

STORAGE TANKS.

10,000 barrels steel refined oil storage tanks, 1000 barrels steel soap stock storage tanks, together with refined oil pump, pipe connections, loading racks and railroad track scales and all other necessary equipment.

REAL ESTATE.

Blocks Nos. 16, 25, 26 and 27; these blocks being 90 feet wide; also 60x300 feet out of west part of block 27; also lots Nos. 11 and 12 in block 15. All located in Chaffin's Addition to the city of Sherman.

The said plant is served by ample and convenient switch trackage for the full operation of same.

TANK CARS.

15 8000-gallon, 1 7000-gallon, 17 6600-gallon steel tank cars equipped with steel underframe, all in good order. One 4500-gallon tank car equipped with wooden underframe, in bad order. Against ten of the 8000-gallon and eleven of the 6600-gallon tank cars there is a first mortgage lien held by the German-American Car Company of Chicago, Ill., amounting to \$2633, secured by car trust.

IRON DRUMS.

Approximately 450 galvanized oil drums, about 55-gallon capacity each.

This entire plant is modern in its equipment and machinery in every respect and can be seen at any time, and a full and complete description will be furnished by me at any time on application for same.

This sale will be made at said time and place at public outcry and subject to the confirmation of the referee.

O. S. GRESHAM, Trustee,
Sherman, Texas.

FOR SALE

35 H. P. Fairbanks-Morse Single-Cylinder Gas Engine. Excellent condition. Have replaced with more power and will dispose of same at a bargain.

The Commercial Auto Body & Mfg. Co.
5345 St. Clair Ave. CLEVELAND, O.

Contractor's Equipment

40 1½-yd. Watson & Troy Dump Wagon
2 10-ton Kelly-Springfield Road Roller
1 10-ton Case Road Roller.
2 2-bag Concrete Mixers, No. 6-A Foot
Special Pavers.
2 Gasoline Concrete Mixers, "Eclipse."
20,000 ft. 1¼-inch Black Pipe.
1 Gravel Washer, R. W. Dull, tubular
36".
1 14-bbl. Tar Kettle, mounted on wheels
2 8-horse Road Machines, hoisting engine, scoops, plows, sprinklers, tanks, pumps, concrete push cars, cars, track, etc.

Chesapeake Construction Company

PRESTON, MD.

Furniture Factory

FOR SALE AT A BARGAIN

On two railways, Southern and L. & N. and on electric car line. Has Electric plant, 15,000-gallon Tank, Automatic Sprinklers. Buildings brick, two stories, and 4000 sq. ft. capacity 120,000 feet lumber. Two H. P. boilers, one 100 H. P. engine. Buildings heated by exhaust steam. Boiler room 30x50 feet. Office and finishing room 60x120 feet, machine-room 80x100 feet, storage-room 40x50 feet. Also dry sheds, houses, barns, etc. Three acres of land.

Plant cost more than \$50,000. Will sell at a bargain. Terms.

FLENNIKEN & CLAIBORNE
109 Empire Bldg. Knoxville, Tenn.

For Sale

Complete EQUIPMENT
for building CONCRETE
and MACADAM ROADS.

Chesapeake Construction Company

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